American Journal of Public Health
and THE NATION'S HEALTH

Volume XXII August, 1932 Number 8

Some Epidemiological Aspects of Psittacosis*

H. E. HASSELTINE, M.D., F.A.P.H.A.
Senior Surgeon, U. S. Public Health Service, Washington, D. C.

IN the winter of 1929–1930, the appearance of psittacosis in the United States and in various parts of the world drew the attention of health authorities to this disease. Until that outbreak it was considered as a disease of birds of the parrot family that occasionally affected man and was supposedly caused by the *B. psittacosis* of Nocard, a member of the Salmonella group, practically identical with *S. aertrycke*.

With the recognition of a disease of human beings apparently due to association or contact with birds of the parrot family, many public health laboratories began work upon the affected birds to throw light upon the diagnosis of the condition. Many workers failed to cultivate *B. psittacosis* from any of the sick, or dead birds, while a few succeeded, obtaining it from a small proportion of the birds examined. However, it did not take long to ascertain that the infection was communicable from birds to laboratory workers.

At the National Institute of Health (then the Hygienic Laboratory) two persons assigned to the work on the disease became ill within a short time, one resulting fatally. A third worker who carried on the investigation for approximately 1 month escaped the infection. However, 9 other persons who had no direct connection with the work on psittacosis but whose duties required them to work in the same building developed the disease. At about the same time 2 workers in the Baltimore City Laboratory developed the disease, and 1 of these, Dr. William Royal Stokes, director of the laboratory, died.

* Read at the Third Annual Meeting of the Western Branch American Public Health Association, at Denver, Colo., June 10, 1932.

Other cases occurred in the New York State Laboratory at Albany and in the New York City Laboratory.

Investigations carried out in Europe by Bedson, Western and Simpson, and in the United States by Krumweide, McGrath and Oldenbusch, and by Armstrong, McCoy and Branham, showed the disease was due to a filtrable virus. Krumweide, McGrath and Oldenbusch found that it could be transmitted to white mice. Studies of the pathology of the disease in birds by Levinthal in Germany, Lillie in the United States, and Coles in England showed lesions differing in some respects from those found in other conditions, particularly in that certain cells contained rickettsia-like bodies to which Lillie gave the name *Rickettsia psittaci*. Whether these bodies have a causal relationship to the disease, or appear as a result of the infection is not yet determined.

After the development of cases in their laboratory workers, the New York City Department of Health turned over its birds and experimental animals to the Rockefeller Institute of Medical Research, where investigations were continued under strict precautions to avoid laboratory infection; yet later on, 1 case developed in this laboratory. Continuing the work begun by Krumweide and his associates, Rivers and Berry were able to establish the infection in white mice, and later on in other laboratory animals. It was found that in mice the disease was far less dangerous for laboratory workers than when birds were used as experimental animals, and, therefore, cases of laboratory infection have been few since that fact became known. These workers also showed that if the virus is introduced into the nose or trachea of monkeys, the animals contract the disease and show pulmonary lesions resembling pneumonia. If the virus is injected intracerebrally the pulmonary lesions are not found though the animal develops a meningo-encephalitis. This finding suggests that most of the cases of psittacosis receive their infection through the respiratory tract. Armstrong reports that in the 1929–1930 outbreak there were 169 cases with 33 deaths in the United States. This outbreak was attributed to the importation of infected parrots, though occasionally human cases were found to be associated with parrakeets or canary birds.

Early in 1931, 5 cases with 2 deaths occurred in New York City that were traced to " love birds," a term that is frequently applied to parrakeets. These birds had been brought into the United States from Havana.

In October, 1931, another group of 3 cases, with 1 death, occurred in New York City. These cases were traced to shell parrakeets that

were obtained from San Francisco. Subsequently it was ascertained that at least a part of this shipment had been imported from the Orient. The diagnosis was established by laboratory tests upon mice.

Early in December, 1931, the California State Department of Public Health learned that 3 of 4 persons who had spent one day (November 27) at a certain home in Grass Valley, Calif., had been taken sick at approximately the same time. The fourth person sickened about a week later; all 4 died. Upon investigation it was found that a pair of shell parrakeets had recently been introduced into the household, the birds having been obtained from an itinerant vendor. One of the birds died a few days after it was acquired. The other bird, although apparently healthy, was subjected to laboratory examination and the presence of the virus of psittacosis was proved. Later similar findings were obtained from autopsy material from one of the human cases.

Subsequent investigations showed that itinerant bird vendors had visited various parts of the state and that in many families that had bought birds there had occurred peculiar cases of disease, some of which resulted fatally. One of these bird vendors had obtained at least a part of his parrakeets from the San Francisco dealers who had shipped the birds to New York City in September that resulted in the 3 cases of psittacosis in New York in October and November, mentioned above. It, therefore, seemed likely that most of the cases traced to birds sold by this vendor could be attributed to imported birds. However another California patient obtained parrakeets from another vendor whose source of supply was California bred birds. Further inquiry revealed a parrakeet breeding industry in California that is of considerable magnitude. Subsequent investigations have furnished ample evidence that some of these breeding establishments harbor birds that carry the virus of psittacosis. These investigations have also shown that many birds may act as apparently healthy carriers of the infection. The extent of the infection in these aviaries is not fully determined, but all indications suggest that it is sufficiently extensive to constitute a most perplexing problem.

From what has been related above, it seems apparent that we have in the United States a disease of birds that is highly communicable to man. The specific cause is a filtrable virus; the chief contributing cause is contact with infected birds or human cases of the disease, or their environment, either as a result of occupation, family association, or casual circumstances.

Since Armstrong collected data on the cases of the 1929–1930 outbreak, I have obtained information on 12 cases occurring in New

York and 43 cases occurring on the Pacific Coast, which is recorded here. Of the 43 cases occurring in California, laboratory examination of the suspected birds was made in 24 cases, of which 20 showed positive results, 1 negative, and 3 were incomplete at the time of compiling these figures.

INFORMATION COLLECTED ON 55 CASES

Sex—Of the 55 cases, 18 (32.73 per cent) were males, 37 (67.27 per cent) females. It is believed that the greater frequency in females is due to the fact that women spend a greater portion of their time in the home, usually care for the birds, and frequently handle them and teach them certain tricks, such as taking food from the mouth of the mistress, which result in closer contact with the birds. It is of interest to note that Barros reports an outbreak in Argentina where the birds were attended largely by men and cases of psittacosis were far more prevalent in males. We have no reason to believe that sex *per se* has any influence on the incidence of the disease in human beings.

Age—Armstrong found cases in all age groups, though more frequent in those between 20 and 70 years of age. The ages of the 55 cases under discussion are given in Table I.

TABLE I

	No. of Cases		*No. of Deaths*	
Age Group	*Male*	*Female*	*Male*	*Female*
10–19	0	1	0	0
20–29	1	1	0	0
30–39	3	7	2	0
40–49	9	13	2	0
50–59	1	10	1	5
60–69	3	3	2	1
70–79	1	2	0	0
	18	37	7	6

Armstrong calls attention to the fact that in his group of 167 cases there were no deaths below the age of 30, while approximately 24 per cent of those above 30 proved fatal.

Occupation—Any occupation that brings the individual into contact with birds of the parrot family may be considered as a contributing cause. The occupation that heads the list is that of housewife, and the explanation of this is given under the consideration of the sex distribution of cases. Three of the women in the group of 55 cases herein reported probably contracted the disease as a result of nursing human cases. One man worked in a pet shop that had infected birds. Fourteen were owners of parrakeet breeding establishments. Eight of these aviaries showed positive results on examination of their birds; 1 gave negative results; and in 5 the laboratory tests were not made or had not been completed at the time of compilation of this report. Two cases, man and wife, owned an aviary of canaries which showed the infection present in 2 of 11 birds examined. One patient was a customs inspector whose duties required him to examine shipments of birds at their port of entry; another was a health official assigned to duty inspecting aviaries; another was a butler in a house

that harbored parrots; and another was a laboratory worker who obtained supposedly normal parrakeets for experimental use in studying a disease of parrot-like birds, other than psittacosis. His sputum, when inoculated into mice, showed that his illness was psittacosis and not the disease he was investigating.

Seasonal prevalence—The colder months of the year have thus far furnished the greater number of cases. Possibly the exceptionally cold winter in California has had a part in precipitating the outbreak of 1931–1932.

Contact infection—Although instances of the transmission of the infection from one human being to another are relatively few, the reporting of such cases has been sufficiently frequent to prove that the disease may be contracted in this manner. In a few instances all contact with birds of the parrot family has been excluded. Sturdee and Scott describe a case in a physician who attended a case of psittacosis. The patient went to the physician's office for consultation and did not see the physician again until 1 week later when the doctor was called to the patient's home to attend him. The bird that presumably infected the primary case had died 2 or 3 days before the physician made his first visit to the patient's home. Twenty-four days after the date of this first visit the physician became ill from psittacosis. Also a sister of the primary case came to nurse her brother, arriving at the home after the death of the parrot. Within 2 weeks she also became sick with psittacosis.

Armstrong reports 2 cases where persons nursing fatal cases of psittacosis contracted the disease, and in both instances the history of contact with birds of the parrot family was lacking.

One of the cases occurring in the California group was undoubtedly contracted while nursing a relative who died of the disease. The primary case, one of the group of 4 cases that brought the existence of psittacosis to the attention of the State Department of Public Health, received her infection at Grass Valley, Calif., on November 27, 1931. She was taken sick on December 6, 1931, after she had returned to her home, about 150 miles from the place she received the infection. When she became sick she summoned a niece to attend her in the capacity of a nurse. She nursed the patient from December 7 to December 12, on which date the patient was removed to a hospital where death occurred on December 18. On December 16 the niece was taken sick with symptoms of psittacosis. She recovered after an illness of about 3 weeks. In this instance the secondary case had not been within 150 miles of the birds that infected the primary case, and no history of contact with birds at any other place could be obtained.

Two other California cases are cited as illustrative of another group that is probably due to human transmission, though remote contact with birds cannot be absolutely excluded. Both were nurses who attended 2 cases of psittacosis in a family. The primary cases, man and wife, were taken sick on February 3 and February 5, respectively, and the man died on February 25. One nurse was taken sick on March 3, the other on March 10. This couple had about 25 parrakeets in a cage in their backyard. The nurses stated that they had never been near the cage nor in contact with the birds, though a blanket that was used to cover the cage had been thrown over a line in the yard and they had walked past this blanket.

An interesting addition to our knowledge of the disease was obtained from this group of birds. Three of the 25 birds became sick and died. Laboratory examination proved them to have had psittacosis. The remaining 22 birds, apparently well, were then sacrified and each subjected to laboratory examination;

13 of the 22 were found to harbor the virus of psittacosis. In 3 other California cases possibility of infection from a human case was found though the secondary cases also gave a history of contact with infected birds.

While on the subject of transmission from man to man, it is desired to call attention to the fact that many of the instances where secondary cases have been found, the primary case has resulted fatally. Whether this means that the virus is more potent or that it is more effectively disseminated by the primary case, or that some unknown factor may have an influence, cannot be stated at this time. We do know that most of the cases develop a peculiar pneumonic lesion. While cough and expectoration are not prominent symptoms in the average case that ends in recovery, it frequently happens that in the late stages of a fatal case repeated efforts are made to clear the air passages of a thick tenacious sputum by coughing. This would greatly increase the possibility of dissemination of the disease by the droplet method.

CONTROL MEASURES

Psittacosis is a disease that affects man largely as a result of human fondness of pets. Rabies also qualifies in this class. In theory, both are easy to control, but our difficulties in controlling rabies warn us that psittacosis will also be a difficult problem. Fortunately, the psittacotic bird is not aggressive as is frequently the case with rabid animals.

The essence of the prevention of psittacosis lies in avoiding contact with birds of the parrot family. Thus far I have yet to find any argument that proves parrots or similar birds are a *necessity*. Neither have I found any one who can show that they fulfil any economic function. The parrot industry is founded upon the natural love of pets by human beings. To do away with pets it is necessary to change human nature.

Control measures therefore must be relied upon, and these divide themselves into two sub-heads, (1) restrictive measures, (2) educational measures.

Restrictive measures may be further subdivided into those applicable to importation of birds, and those applicable to domestic bred birds. Parrots and the larger birds of the parrot family do not breed in captivity to an extent that will make domestic raising of such birds profitable. On the other hand, parrakeets and love birds will breed readily in captivity in the United States, and a rapidly growing industry in breeding these birds has become established in Southern California.

The following measures are applicable to imported birds:

1. *Embargo:* This aims to exclude all birds specified in the embargo order. During the outbreak of psittacosis in 1929–1930 an embargo on parrots was made effective January 24, 1930. The

embargo did not apply to other birds of the parrot family as the outbreak of 1929–1930 seemed to be almost wholly due to infected parrots.

2. *Quarantine:* On October 21, 1930, this embargo requirement was modified so that parrots might be admitted if shipped under prescribed conditions and detained at the quarantine station at the port of arrival for 15 days, provided none of the birds showed signs of illness during the detention period. Other members of the parrot family were not subject to detention. This provision has been in effect for more than 18 months, and human cases of psittacosis tracing to parrots have been few, if any. On the other hand, numerous cases have been traced to other imported birds of the parrot family, and in February, 1932, the detention period was extended to cover all birds of the parrot family.

At about this time it was found that psittacosis was present in domestic parrakeet aviaries, so it has been difficult to say what has been the effect of this detention of imported birds since that time. Recent findings that apparently healthy birds may be carriers of the virus lessen the value of quarantine detention as a control measure.

3. *Import duty:* The customs duty on imported birds has been low. While an absolute embargo may work a hardship upon some scientific organizations that desire to import birds, as well as upon individuals desirous of having birds at any price, a high duty on psittacine birds would allow importation in such instances yet largely restrict commercial traffic in such birds.

Several control measures are applicable to birds bred in the United States and to establishments handling imported birds after arrival.

1. Every person or firm engaged in the breeding, buying, selling or exchanging of birds of the parrot family should be registered in the office of the proper health authorities.

2. Every person or firm engaged in any of these activities should be required to keep records whereby the tracing of infection may be facilitated. Such records should also include information as to cases of illness and death among birds in the establishment. Such records are always to be available to the health authorities.

3. The sanitation of aviaries and pet shops may be left to judgment of the local authorities, due attention being given to housing conditions for birds, particularly overcrowding, cleanliness and proper maintenance of the plant. The same conditions should be considered for shipments of birds while in transit.

4. Isolation of sick birds should be required and, if possible, laboratory examination of birds dying from disease, for evidence of psittacosis should be made.

5. If necessary absolute quarantine of an establishment may be invoked.

On a recent visit to California I visited several parrakeet breeding aviaries and learned that in nearly every brood of young parrakeets there are a varying number of " crawlers." A " crawler " is a young parrakeet that is too weak to fly when the bird leaves the nest. Such birds drop to the bottom of the cage and crawl about the floor for a time. Many of them die, but some gain sufficient strength to enable them to fly.

I also learned that such birds are often bought by bird vendors, particularly itinerant peddlers, at a very low price and notwithstanding the loss of a considerable number by death, the survivors are sold at a sufficient advance to make the transaction profitable.

In view of the prominent part played by parrakeets sold by peddlers in the California outbreak, and the frequent history of sickness and death of the birds acquired shortly after purchase, it occurred to me that possibly these weak birds or " crawlers " may actually be cases of psittacosis in birds. It is well known that the greatest mortality in aviaries is in the young birds, suggesting that possibly the older birds have had the disease and recovered. If such is the case, an effective control method might be found in requiring birds to be held until they have reached a certain age before they are disposed of by the breeders.

EDUCATIONAL MEASURES

These consist of the dissemination of information concerning psittacosis and how to avoid it. Emphasis should be laid upon the fact that if contact with birds of the parrot family be avoided, the danger of contracting the disease is greatly reduced. Those persons who will not avoid all contact with psittacine birds should be warned (1) of the dangers of psittacosis; (2) that it is more likely to appear in cold weather when the birds are kept within the home and in closer contact with human beings; (3) that recently acquired or young birds are more dangerous than birds that have been in the family for some time, *provided such birds have not been in contact with infected birds* (some of the cases of psittacosis discussed in this paper were contracted from birds that had been in the family for years, but had been taken to an infected bird shop for treatment or for boarding during the absence of the owner); (4) that the practice of feeding birds from the mouth, " kissing," etc., is extremely dangerous if the bird harbors the virus of psittacosis; (5) that any sickness in birds should be regarded as suspicious; (6) that cages should be kept clean, cleaning

being preferably done out of doors in the sunlight after the cage has been moistened to prevent the dissemination of dust.

Should a case of psittacosis occur in a member of the household it should be isolated and ordinary bedside prevention measures applicable to other infectious diseases should be practised, particularly the disinfection of sputum, the use of gauze in place of handkerchiefs, the gauze being burned after it has been used.

It is believed that the educational measures should be stressed since the American public knows little, if anything, concerning this dangerous and relatively highly contagious infection.

ACKNOWLEDGMENTS

Grateful acknowledgment of indebtedness to each of the following groups is hereby made, for information and data furnished: California State Department of Public Health; City Health Departments of San Francisco, Los Angeles and New York City; the local health officers of places where cases of psittacosis have occurred; the attending physicians of such cases; Dr. Karl F. Meyer and his staff of the George Williams Hooper Foundation, San Francisco, and Drs. T. M. Rivers and G. P. Berry of the Rockefeller Institute for Medical Research, New York, for information on laboratory results.

BIBLIOGRAPHY

Armstrong, Charles. Psittacosis: Epidemiology of 1929–30 outbreak in the United States. *Pub. Health Rep.*, 40:2013, 1930.

Armstrong, C., McCoy, G. W., and Branham, S. E. Filterability of the infective agent of psittacosis in birds. *Pub. Health Rep.*, 43:725, 1930.

Bedson, S. O., Western, G. T., and Simpson, S. L. Aetiology of psittacosis. *Lancet*, 1:233 and 345, 1930.

Coles, A. C. Microorganisms in psittacosis. *Lancet*, 1:1011, 1930.

Krumweide, C., McGrath, M., and Oldenbusch, C. The etiology of the disease psittacosis. *Science*, 71:262, 1930.

Levinthal, W. Die aetiologie der psittakosis. *Klin. Wchnsch.*, 9:634, 1930.

Lillie, R. D. Rickettsialike inclusions in psittacosis lesions. *Pub. Health Rep.*, 45:773, 1930.

Rivers, T. M. and Berry, G. P. Psittacosis: Experimentally induced in (II) Mice (III) Rabbits and guinea pigs, and (IV) monkeys. *J. Exper. Med.*, 54:105–144 (three papers) (July), 1931.

Poliomyelitis in San Francisco

IN 1930, the California district experienced its most extensive outbreak of poliomyelitis. Beginning in June, 1930, the epidemic continued through the following March. There were reported 245 local and 50 non-local cases, and 32 deaths. Although no part of the city was free from the disease, it was found that the prevalence was directly proportional to the density of population. Males were affected more frequently than females and 75 per cent of the males were hospitalized.—J. C. Geiger and J. P. Gray, Statistical Study of Poliomyelitis in San Francisco in 1930, *J. Prev. Med.*, 6:145 (May), 1932.

Contributions of the Western Branch to Public Health*

KENDALL EMERSON, M.D.
Acting Executive Secretary, American Public Health Association, New York, N. Y.

THE success or failure of any government in the last analysis must be measured by the well-being of its citizens." The triteness of these words in a recent communication of Governor Roosevelt does not detract from their importance. It is a sentiment that cannot be too often repeated. It is well, therefore, to inquire in whose hands rests the responsibility for the well-being of the citizens of a community.

The obvious answer is that the responsibility rests in the hands of government. But government is an abstraction. It is not an automatic machine which once wound up will run indefinitely on its own momentum. It may be compared rather to an electric current which derives its power from an informed voting constituency and transmits it through elected administrative officers. To this definition should be added the comment that it is human and therefore fallible. Our Constitution states that the objective of government is to secure to the governed enjoyment of life, liberty and the pursuit of happiness. With all three of these objectives public health is inextricably linked. No other single function of government touches so universally every phase of man's existence.

It is this fact which has turned the minds of an increasing number of leaders in medicine into public health channels during the past 50 years. So far-flung a responsibility must be left in no detail to chance. Health administration is no longer a job; it is a vocation. He who is called must dedicate himself to the task with humility, fortitude and self-denial. On his honorable discharge of the duties which his profession imposes depends in very truth the inalienable right of his fellow citizens to life, liberty, and the pursuit of happiness.

The vision of certain early pioneers more than 60 years ago recognized the future magnitude of this responsibility, caused them

* Presented at the Third Annual Meeting of the Western Branch American Public Health Association, at Denver, Colo., June 10, 1932.

to see the need of adequate professional organization, and led them to the establishment of the American Public Health Association. The career of our Association has not been unfraught with difficulties. So rapidly growing a profession must of necessity be recruited at first from the material at hand, devoted enough, without doubt, but untrained—men and women of the pioneering type who are rather notoriously restless under the restriction which organization implies. In this, the experience of public health is in no wise unique, for every institution in the too rapidly growing fabric of our social development has suffered in kind from the emotional imbalance of adolescence. But through shadow and sunshine the A.P.H.A. has plodded sturdily along justifying in fair weather and in foul the need for its existence, its power for good in promoting the well-being of the people.

The controversial element in human nature is at once its strength and its weakness. Especially do Americans love debate. Vocal minorities are one of our most cherished institutions. The Irishman expressed this well when he said, " Far be it from me to spoil a good fight by rayfusin' to participate." It is somewhat striking as one reviews the history of the A.P.H.A. to note the prevalence of a certain centrifugal tendency. The psychologists call it the schizoidal temperament. At the same time they point out that it is not necessarily a characteristic of what we call strength of character, but may rather indicate a certain belligerency and egocentricism, by no means indicative of true greatness. Because of the broad interests covered by our Association and the devotion of its various members to the fields of their special culture, it is in no wise strange that rifts should have occurred. It would have been unhealthy had this not been the case. That we should pass through such periods was inevitable. But it is my firm belief that the day for rugged individualism in public health is over as it is in business and in international relations. We can never possibly all agree, since no one of us is ever wholly right, but we can go far along the road if we will each recognize the limitations imposed by the fact that he is human.

When the Western Branch of the A.P.H.A. was projected, I am informed, there was some hesitancy on the part of the Association in approving the suggestion. This was perhaps based on a natural caution derived from past experience. Almost the first, and one of the pleasantest duties that devolved upon me when I had the honor to assume the acting-secretaryship of the Association was a visit last year to the June meeting of the Western Branch in Seattle. I went as a novice, and as a stranger to much of the historical setting of the national and branch organizations. With no preconceptions, there-

fore, I could fling myself freely into enjoyment of the occasion, and it is a delight to have this opportunity to express the admiration for the Western Branch which that meeting aroused. Never have I attended a meeting where the spirit of coöperation, sincerity and good fellowship more completely prevailed. Nor have I often been at meetings where the papers were so uniformly good, the audience so alert, and the discussion so inspiring. I recall expressing some such feelings at a brief luncheon talk and stressing the fact that, while I hoped the East could still make some contributions of value to the West, I was never so convinced that the East could not possibly do without the priceless contributions to public health work which it lay in the power of the West to make.

We live in a big country and while we may perhaps love it all, yet in the words of Kipling:

> God gives all earth all men to love
> Yet since our hearts are small
> Ordains to each one place shall be
> Beloved over all.

We will and should love our own home best, but in its extreme form that virtue becomes a vice as is so well demonstrated in the parochially minded members of our Congress who permit their sectionalism to inhibit the essential functions of our government. Our situation is happier since we are dealing not with a regional but a universal problem. The health of your country can be assured not alone as you do your work well but as the man next door does his equally well. And this principle has nation-wide application. If health were a different thing in California from what it is in Maine, if methods of maintaining the welfare of the people in one region differed radically from those of another portion of our country, we might look with apprehension at the possibilities implied in the development of sectional branches. With common objectives and working on common principles, organization depends on administrative expediency. Strong branches demand strong roots. The national Association will be as strong as the sum of its parts, and the more democratic its organization, the more effective will be its influence.

Now let us examine in brief detail what the Western Branch has done in the 3 years of its glorious existence. Consider first some of the practical results achieved. It has perfected an organization with regularly elected officers, a constitution and by-laws. It provides for an annual meeting where the business of the organization is transacted and scientific papers are presented, while at the same time opportunity is afforded for that most valuable service which a meet-

ing can render, the personal contact and social conference between men of similar interests but so scattered as to render frequent visits impossible.

Membership in the Western Branch includes workers in the 11 western states, Alaska, Hawaii, the Philippines, and British Columbia. These regions possess certain peculiar health problems incident to their vast and often thinly populated extent, their enormous mining and agricultural interests, and their considerable seasonal migrations due to industrial conditions within their boundaries. The West is a territory where travel abounds and visitors from all parts of the world bring with them the special problems of a roving populace. Racial admixtures on a considerable scale prevail in many parts and the adequate care of Orientals, Indians, and Mexicans furnishes constant food for discussion and conference. The opportunity afforded by a closely knit organization for the consideration of such mutual problems is self-evident.

Through the foresight and good judgment of its officers, the Western Branch has established a public health department in the *Western Hospital Review,* a widely read monthly magazine. In this department are published papers selected from those presented at the Annual Meeting of the Branch. The JOURNAL editors have called my attention to the fact that too few articles appear in that publication over the signatures of our western members. While it is fitting that papers dealing with matters of local concern appear in the *Western Hospital Review,* it is equally true that much which emanates from that part of the country has nation-wide interest. So far as is humanly possible in the limitations of the JOURNAL's pages, special articles from the West will always be heartily welcomed and gladly published.

From the start the very efficient Secretary of the Branch introduced a *Western News Letter,* issued monthly by the New York Office, which contains important news items from all parts of the country, but serves the nearer needs of the Western Branch in particular as its official organ. It is read with deep interest by Fellows and members of the Association over widely scattered areas. Lately the A.P.H.A. has adopted the idea for its own use, and two numbers of the Association's news letter have already been issued. In case the Western Branch feels this to be an infringement we will gladly change the form and name, but the idea seemed so good to us that we adopted it *in toto* for occasional national use.

There has been a notable growth in membership for the American Public Health Association as a direct result of the interest aroused in

the western states through the active work of the Branch. This is still evident and, although hard times of necessity slow up the growth temporarily, new members from the West continue with gratifying regularity to send in their applications. The Association leans heavily upon its membership for support and every present member can render inestimable service by stimulating all health workers with whom he comes in contact to join the society both for its larger support and for the unquestioned benefits which membership assures.

I have not exhausted the list of practical benefits accruing from the establishment of the Western Branch, nor have I attempted to forecast its possibilities for the future. These stretch out along a glowing pathway, but I must conclude this discussion after referring to another, less tangible, benefit which the organizers of the movement had in mind and in which their hopes have been abundantly fulfilled.

Last year just before his untimely and greatly lamented death, I had the privilege of talking with Dr. Hassler of San Francisco, who may be called the father of the Western Branch. He described to me the ambition for the more rapid development of public health in his part of the country which had led him to promote and launch the enterprise. He spoke at the same time, and with feeling, of his loyalty to the parent Association. But he referred to the vastness of the country, the limitations of time and money which make it so difficult for a health worker to travel, the need for injecting *esprit* and hope into the mind and heart of the isolated worker whose struggles and successes appeared to bring so little sympathy and reward. It was the man of vision who spoke, a bit bowed down by the titanic task which the public health officer must face, but at the same time buoyed up by the bright picture in human welfare which could be painted when once public health was organized on a genuinely efficient basis. It was this ideal which infused his whole life's work and which was reflected in no small measure in his effort to bring greater solidarity into the public health field by supplying a ready means of closer contact between the workers. This ideal is one to which we may all subscribe and for which we should all fight without capitulation. Mourned and missed by all his colleagues, he was called away while the fruition of his dream was still in the bud. I suggest that we who remain cannot do better than to press on in his footsteps till this organization for the good of the health worker, but far more for the good of the citizens of these several states, shall have achieved the great future toward which his steadfast eyes were turned.

A County Hospital Health Center

MICHAEL M. DAVIS, PH.D., F.A.P.H.A., AND MARY ROSS
Julius Rosenwald Fund, Chicago, Ill.

THE fundamental job of modern medicine is to keep the patient from getting sick at all; the second, failing prevention, to find him while he still is well enough to be up and about and treat him in home, office, or clinic, to forestall serious illness, if possible. And when both these hurdles have been lacking or have proved ineffectual, there must be the hospital, where both doctor and patient will find all the resources that medical science provides for care and cure.

The Spartanburg General Hospital in Spartanburg, S. C., is unusual, possibly unique, in bringing together under one direction all three of these aims. The hospital itself is a county institution, maintained by public appropriation, private contributions and patients' payments. Its group of buildings consists of the General Hospital with 130 beds for white patients; the Negro Hospital with 50; a building housing out-patient and social service departments, and an isolation unit of 12 beds; nurses' home, laboratory and other service units. Two miles away, the tuberculosis department has beds for 46 white and 20 negro adults, and 30 children.

The unusual quality of the Spartanburg Hospital, however, does not lie in its attractive and adequate plant but in the network of

The Spartanburg General Hospital, Spartanburg, S. C.
At the right is the Nurses' Home, at the extreme left the Outpatient Building, which houses also the social service department, county health department headquarters, and an isolation unit

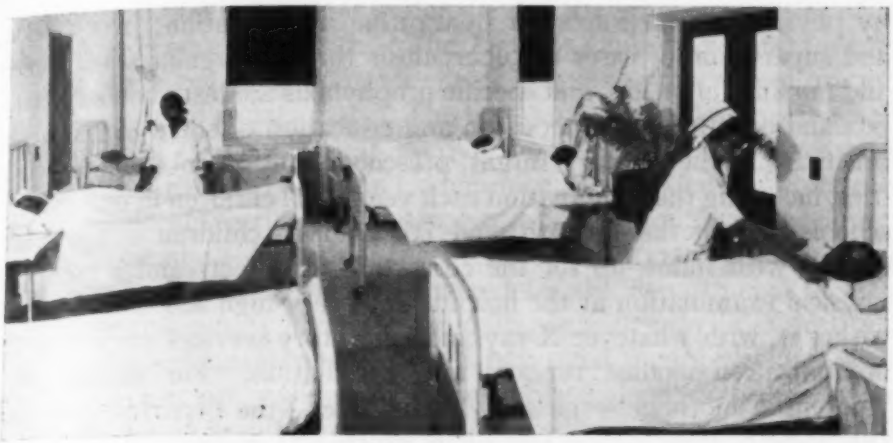
service which has spread out from the institution as a center to meet the medical and social needs of the county. Its superintendent, Dr. J. Moss Beeler, is also the director of the county health department, which has its headquarters in the hospital out-patient building. The medical director of the hospital's tuberculosis department, Dr. J. Fabian Busch, serves also as assistant county health director. Laboratory, X-ray, and social services are used alike for in-patients in the three hospital units, for out-patients in the hospital clinics, and the county health department, with its nurses, nutrition workers, itinerant clinics, health centers, and the like. A central record system makes it possible to see at a glance what contacts a patient has had with any branch of the organization. Except in emergencies, free and part-pay patients are admitted to the hospital through social service in the out-patient department. Hospital patients from the county districts are referred on discharge to the county nurses for follow-up.

Through the clinics and nursing supervision in the county, many patients can be saved the necessity of a stay in the hospital; through supervision after hospital care, many can be helped to guard against relapse. Meantime in hospital, clinics, schools, churches, and other community centers, the educational services of the health department are working to prevent the need for care, notably in pellagra and tuberculosis.

In the words of Dr. Beeler:

> Our objective is, of course, the health and welfare of our patients and our community. Frequently hospitals consider only care, overlooking the fact that treatment, operations, and so on, only relieve or cure the symptoms of a condition and do not help the community to prevent its recurrence.
>
> Here we have tried to keep in mind first, the comfort and scientific treatment of our patients; second, the belief that any hospital or health center in the South should be an educational center not only for physicians but also for the public. For this reason we use the institution as a meeting place for the County Medical Association, the Nurses' Association, the Community Welfare Association, and the county nurses. The library is open to the personnel. All physicians receive copies of the records of charity cases referred to the hospital.
>
> We realize that if we educate the medical and nursing professions, they in turn will educate the public. Educating the public is the best means of preventing disease. We try to keep before us the ideal that a community needs to be interested in a patient not only when he is with us but before he becomes a hospital problem and after he leaves—so that he will not be obliged to return. It is impossible to separate health from social problems, and hence we work to obtain for our patients whatever they need to help them help themselves, whether it is a well balanced diet, glasses, an artificial limb, or an education.

Spartanburg is on the "fall line" of the Carolinas—the point where the high land drops off to slope toward the sea. In the early



A ward in the Negro Department

days the cotton mills came to this district because of the water power; now the streams are harnessed not to mill wheels but to the turbines that make electricity. Throughout the county are the mill villages—each a town in itself with its own churches, schools and stores—to which come families from the back-country districts who have not previously been used to factory life. In the purely agricultural sections about the mill villages, tenant farmers are the rule. Economic depression has fallen on both farmers and mill-workers in the past few years, complicating the heavy burden of typhoid, pellagra, and tuberculosis, which the county shares with the rest of the state.

Against these are ranged the forces of the county health department, headed by the 2 physicians mentioned above, a county dentist, a sanitary director, a director of nurses trained in public health work, and 5 white and 1 colored graduate nurses. The services of a woman physician and the use of a healthmobile have been given to the county by the American Women's Hospitals. A colored physician is employed on a part-time basis for work with the colored residents who comprise about a quarter of the county's population of 123,000. Working with these are 18 industrial nurses employed by the mill owners for the communities; and, through the coöperation of the state and county boards of education, 5 trained nutrition workers (4 white and 1 colored) whose salaries are paid partly out of federal funds, partly by the state and interested individuals and mills.

The work of the county health department includes sanitary supervision of milk and water supplies; and sanitary inspection of schools, camps, barber shops, churches, foodhandling establishments, and private premises; the control of communicable disease through reporting

by physicians; measures for quarantine and isolation; registration and supervision of cases of tuberculosis through regular chest clinics and nursing follow-up, and specific prophylaxis against typhoid, smallpox and diphtheria; supervision and education of some 85 midwives practising in the county; infant, preschool, and school hygiene activities, including the examination each year of all children in one-teacher schools, and of the 1st, 4th, and 7th grades; children in the grade schools with follow-up for the correction of defects and a complete physical examination at the hospital for every high school senior who wishes it, with whatever X-ray and laboratory services are indicated, immunization against typhoid and vaccination. For mothers and "potential mothers"—girls of 16 and over—the department organizes home hygiene classes and Little Mothers' Leagues. It supervises pellagra cases; registers children suffering from orthopedic defects; and carries on an active program of health education, including lectures, motion pictures and health plays, circular letters, pamphlets, health exhibits, and press articles.

In 1930 Spartanburg County appropriated $17,500 for the county health department and dental program. That year's budget of the department, including income from sales and services, state and federal subsidies for the nutrition program, and money grants from outside organizations, amounted to $30,792. This figure does not take into account the work of the industrial nurses—an integral part of the county program—whose salaries are carried by the mills, or of the community houses at the mills used by the department as health centers; nor does it include some services utilized by the department but carried in the budget of the Spartanburg General Hospital—laboratory service, for example, or the salary of the county health director, who, as mentioned above, is superintendent of the hospital. The range, variety, and extent of the county work which has been called into being through the modest appropriation of $17,500 is a tribute both to the economy of the interlocking organization of county hospital and health department and to the administrative skill which enlists and uses effectively the interest of individuals and organizations within and without the county.

In 1930 the department took in $2,000 from the nominal fees charged whenever possible for antityphoid and toxin-antitoxin administration, and from the sales of dried brewers' yeast as a pellagra preventive to persons who could afford to pay a nominal sum. The salaries of the negro public health nurse and of the part-time negro physician are in part covered by a temporary grant from the Julius Rosenwald Fund. The American Women's Hospitals appropriated

more than $5,600 to be spent under the department's auspices in educational and preventive work. The Kiwanis Club gave $500 toward the cost of the crippled children's clinics including provision of braces, special shoes, and plaster casts. The town council and Parent-Teacher Association of Campobello, at the northern end of the county, paid the rent of a Health House or Community Health Center, while the city of Woodruff carried the expense of a health center at the lower end of the county. At each of these a nurse is stationed permanently. In districts other than the two covered by the department's health houses, the community houses of the mills are used for clinics, lectures and the like. The salaries of the 18 industrial nurses working with the department are covered, of course, by the mills, and in many instances mill owners have paid part or all of the expense of a special health project put on by the department in their villages. Aid from the schools and industrial plants amounted to $3,500 for the year.

Nursing follow-up of cases of tuberculosis within the city is done by the local tuberculosis association, while community organizations such as the Red Cross, Salvation Army, and the like, assist in other special problems. Committees of women are organized in the school districts who arrange for the local school inspections and promote interest in the follow-up of children with defects. After the examination is held, the list of pupils with defects is sent to the school board and by the board to the teachers concerned, the principal of the school, and, if a mill school, also to the superintendent of the mill. Letters are sent to the parents, urging them to have the trouble corrected, and paving the way for the later follow-up by the nurse, if necessary. The director and assistant director devote four evenings a week to health education talks at the community centers, churches, and the like: in 1930 these lectures and motion picture exhibitions reached a total of more than 34,000 persons. One night of the four is given to negro audiences.

Probably no single subject is of greater importance in the preventive campaign broadcast from the hospital throughout the county than that of nutrition, to combat the two serious problems of pellagra and tuberculosis. On the basis of incomplete reporting, it is estimated that there were about 3,000 cases of pellagra in the county in 1930, and the number is believed to have increased here, as elsewhere in the South, during the hard times of recent years. Yet the deaths reported show a decline: 72 in 1927; 51 in 1928; 47 in 1929; 48 in 1930. People now are coming to the nurses and doctors for advice, recognizing the early symptoms and no longer insisting that they are suffering from sunburn or have used too hard soap.

For the past 4 years, the months of February and March have been used for a special campaign against pellagra. Meetings are called of the key groups in the community: the teachers, community workers of the Red Cross and similar organizations; industrial nurses, physicians, home and farm demonstration agents, ministers, club women, representatives of parent-teacher associations, merchants, seedsmen, and so on, at which the program is outlined. To reach those not present at the meetings, a letter is sent to every teacher, preacher and community worker. All of these are urged to arrange talks in the schools and churches and at other meetings on the value of gardens and the need of pellagra preventive foods.

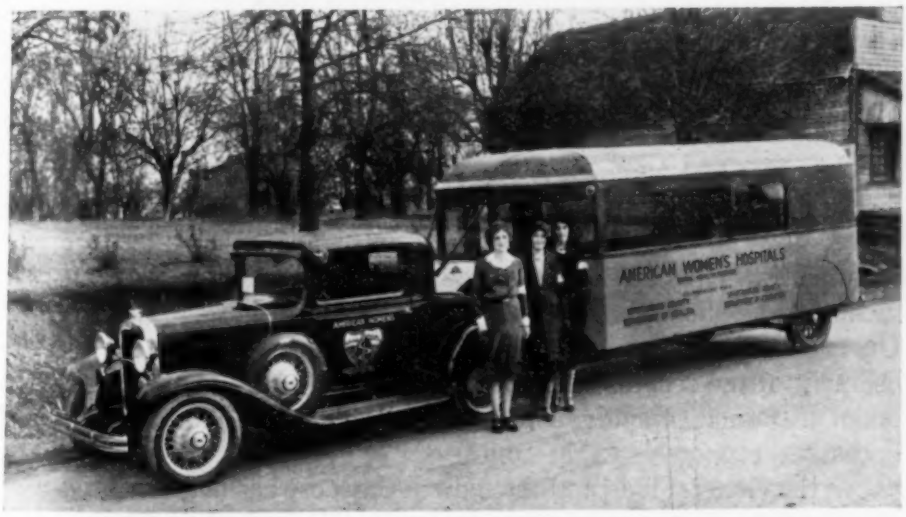
Nurses and club women see to the poster and window displays in post offices, mill offices, and stores. In many instances the industrial nurses have interested the mill owners in having garden space plowed for all who agreed to plant and tend gardens, and have maintained hot-beds for winter gardens. One mill last year had a proud record of 200 gardens. The healthmobile supported by the American Women's Hospitals tours the county visiting all one- and two-teacher schools, while pupils and their mothers go to see the wonders of its tiny kitchen with its gas stove, sink, and electric lights; listen to the talks on pellagra and on general health by physician and nurse; and watch the nutritionist prepare the right food in the right way. In March the 5 nutritionists devote all their time to talks and demonstrations of pellagra preventive foods.

Throughout the year education in nutrition and other aspects of home hygiene is carried on through the clubs for women, girls, and little mothers, of which 20 were organized by the county nurses and 17 by the industrial nurses. The subject, of course, is emphasized constantly in dealing with parents at the well baby, preschool, and school clinics, and in home visits. It is also carried in the simple mimeographed news sheets sent out monthly to teachers and to homes, including those of all farmers in the county with less than 100 acres. Last September's issue of the bulletin and that month's program of nutritionists and nurses were used to stress the planting of winter gardens to give families fresh food through the cold months, but the drought made planting at that time inadvisable, so that a quick turn had to be made and home-canning of present produce emphasized instead. Through special arrangements with the manufacturers, the health department was able to distribute more than 3 tons of brewers' yeast in 1930 at nominal prices, or at need, without charge, through drug stores and at the health centers and the hospital clinics to patients who had a doctor's prescription. " Pellagra is more an educational

problem than a medical problem," Dr. Beeler believes, and as the result of this effort, mobilizing all the forces of the community, the hospital is only rarely called upon to deal with an advanced case.

During 1931–1932 another special project of the department is an intensive 10-month campaign against tuberculosis in one mill village where the disease has shown a high record during the past 5 years, made at the request of the residents, mill owners, doctors, and schools. Family histories have been taken in a house-to-house canvass, including a record of health and heredity, of milk and water supplies, of rooms, beds, and the like. Tuberculin tests have been made of 309 school children and teachers out of a total enrollment of 336, and of 225 workers in the mills and 150 other persons of the community, and all positive reactors then have a complete physical examination, including a chest X-ray at $3.75 for those who can afford it. Every school child is weighed and measured monthly, and reports are sent to the parents of those who are more than 10 per cent underweight or show other evidence of malnutrition. Classes of the mothers of malnourished children have been organized to make a special study of nutrition, while other classes of women and young girls are studying this and other aspects of home hygiene and child care.

When such special projects as these and the regular activities of the health department have failed to prevent or check illness, or when more intensive examination is required than can be done at the traveling clinics, the patients come in through the social service department to the out-clinics or other services in the hospital. The clinics at the



The Healthmobile maintained by the American Women's Hospitals for the Spartanburg County Health Department

hospital which in 1930 recorded 1,350 admissions and 2,756 return visits, include as services: medical, surgical, obstetrical, eye, ear, nose and throat, pediatrics, dental, genitourinary, chest, orthopedic, X-ray, syphilological, and psychiatric. The county does not appropriate funds for the out-patient service as such, and except for the social service department, its personnel is part of the hospital force. A nurse from the senior class in the training school serves in the department for 2 months at a time. A clinic fee of $.25 is charged if the patient can pay it; for syphilis, a treatment fee of $.50. X-rays are charged at cost if the patient can pay. Nonresidents are not accepted, nor patients who are able to pay for private service or are already under the care of a physician.

In the General Hospital, where white patients are cared for, the full-pay rate for ward beds is $2.00 a day, while private rooms are from $3.00 to $6.00. The social service department, however, has power to fix rates in accordance with a patient's circumstances, or to admit without charge, if the patient is unable to pay. If the family can pay $.25 a day and no more, that is accepted. Rates in the negro hospital are $1.00 a day for the wards and to $3.00 a day for private rooms.

During the present economic stringency patients who could bring farm produce but no money to defray hospital expenses have been permitted to do so, and hams, chickens, fruits and vegetables, and the like, have been credited against hospital bills and added to the current menus, or canned when immediate use could not be arranged. In other instances, arrangements have been made to let unemployed men work out bills incurred by their families by painting, carpentry, and other work under the direction of the hospital's employees.

In 1930 the hospital gave 33,395 days of care at a per diem cost of $3.86. The daily cost at the tuberculosis unit is $2.42 and at the negro unit, $2.05. Thirty-eight per cent of the patients were cared for without charge. The total expense of the hospital for the year was $141,315. Receipts from in-patients and out-patients and miscellaneous receipts amounted to $62,749; endowment income, $7,107; subsidy from the Duke Endowment, $15,194; county funds, $54,000. During the past 6 years, reorganization within the hospital, the establishment of the social service department and of a dietetic department under a trained director, and increased volume of care have resulted in marked economies to the county.

In the General Hospital the patient day cost has been reduced from $6.63 to $3.86; the average cost per meal from $.42 in 1925 to $.22 in 1930. In 1925 the average monthly pay roll, with a daily average

of 34.7 patients, was $2,600; in 1930, with the personnel serving the group of institutions with a daily average of 92 patients,* the monthly pay roll was $3,700. In 1925, the General Hospital gave 11,665 patient-days of care at a cost to the county of more than $86,000; in 1930, 35,995 patient-days at a county cost of $45,000.

Land, buildings and equipment of the institution represent a capital valuation of $728,676. The Duke Endowment Fund gave $67,500 and the Julius Rosenwald Fund $40,000 toward the costs of the Tuberculosis Unit, Negro Hospital, and the Out-Patient Building, erected during 1930 (which also houses the social service department, county health headquarters, and isolation unit). The total cost of the three buildings was $296,000. The furnishing of the new buildings was largely by gifts from the community.

As a county institution, the Spartanburg General Hospital is governed by a board of 9 trustees appointed by the governor upon recommendation of the members of the county legislative committee. In his hospital capacity, the superintendent is directly responsible to this board; as director of the county health department, he is responsible to the county board of health, which includes representation of the county boards of finance and education, and representative citizens.

The hospital is registered by the American College of Surgeons and the American Medical Association and accredited for interneships, and its nursing school is accredited by the state board of examiners. The resident staff includes a house physician and 3 internes; the nursing personnel, 8 graduate and 56 student nurses. The laboratory which in 1930 made 10,353 examinations for in-patients, 31,600 for out-patients, is directed by a physician assisted by a laboratory technician and 2 student technicians. The X-ray department is in charge of a member of the medical staff, assisted by a technician and student technician. There is a well organized medical staff of 31 members, an associate staff of 3 consultants in orthopedics, psychiatry, and preventive medicine (in which the superintendent of the hospital serves as a consultant in psychiatry and the director of the tuberculosis unit as consultant in preventive medicine), and a visiting dental staff of 14 members. Relationships with physicians in the county are cordial and active in the work of both hospital and health department.

Through the use of a common personnel, the interest and zeal of its officers, ingenuity in stimulating self-support in patients, and

* The General Hospital of 130 beds had an average daily occupancy of 89; the Negro Hospital, opened in October, an average occupancy of 21 beds; and the tuberculosis hospital, where 37 beds were available for occupancy beginning in October, an occupancy of 34. While there is a waiting list for the last named institution, non-paying patients could be admitted only to the number of 27 provided for by county appropriation. Average occupancy during 1931 was 38 per cent of the beds available for use, as limitation of county funds made it impossible to use in full the facilities of the tuberculosis and isolation units.

coöperation with groups both within and without the county, Spartanburg County has achieved a center for medical care and training, for preventive work and community education which would be unusual in far richer sections of the country, and represents a remarkably effective use of the limited resources available locally. By personal knowledge of the communities they serve, the staff and officers of the hospital are able not only to understand the social and economic as well as medical problems that their patients present, but also the measures that will forestall future burdens on both individual families and on the county.

Aside from the training within its walls, the center is doing a valuable educational work in the training of nurses and other members of its personnel to inter-relationships of medical care and social supervision in community and institution. Its usefulness will be further broadened as development of the work for negro patients makes it possible for the Negro Hospital and extramural work to serve more generally for the training of members of that race. The Spartanburg General Hospital and the services coördinated through its direction represent a most unusual and promising example of the three-fold service of modern medicine to the community—prevention, care, and education.

Administrative Practice in Scarlet Fever

AS of 1930, a detailed examination has been made of the isolation and quarantine requirements for scarlet fever in 44 of the larger cities of the United States. In many instances the regulations are decidedly confused and often indefinite. There is also a lack of uniformity in principles involved. There should be prepared minimal restrictions compatible with safeguarding the public health. There is need for clarification of terms and better understanding of the technics involved. Also, uniform terminology would permit progress through comparison of experiences. Evaluation of the bacteriological methods now in vogue, the effect on the communicability of scarlet fever, of degrees in type of disease, age of patient, and geographical and seasonal variations are only a few of the relationships to be determined.—George B. Darling and John E. Gordon, American Administrative Practice in the Control of Scarlet Fever. *J. Prev. Med.*, 6:185 (May), 1932.

Public Health Aims and Professional Services of Nursing

During Infancy, Preschool, and School Ages*

HORTENSE HILBERT, R.N.

Staff Associate on Nursing, American Child Health Association, New York, N. Y.

REASONABLE functions and services of nurses in relation to a public health program during infancy, preschool and school ages are:

INFANCY

The general public health aim is no longer restricted to prevention of infant deaths and illnesses. To get for the child during this period and later childhood the best possible chance for complete health is the whole purpose. Healthy infancy naturally presupposes good prenatal, intrapartum and postpartum care. During infancy, continuous, systematic medical supervision followed by home supervision and parent instruction are generally considered to be the most important provisions. In securing these the public health nurse contributes the following services:

She helps to get as many as possible of the new-born infants of her community under health supervision. This is comparatively easy through birth reports. Mothers, too, are most approachable at this time.

She urges placing babies under the continuous systematic care of a physician. Whether this medical supervision comes from organized centers or private practitioners depends in each case on what the community has to offer the economic group which the particular family represents. Sometimes organized centers serve the purpose of getting the mother accustomed to well baby service so that she will want it and get it from her physician later as a matter of course. In many cities the eligibility ratings for free or semi-pay care from organized sources are so definitely determined that choice becomes automatic. Usually, however, a considerable degree of guidance in these matters devolves upon the public health nurse.

That she interpret and supplement the physician's instructions verbally or by demonstration in the home, is as a matter of course taken to be the job of the public health nurse if the mother goes to a health center. If advice is given privately by the physician, she may give the same service if desired by the mother and requested and approved by the physician in question.

* Read before the Child Hygiene Section of the American Public Health Association at the Sixtieth Annual Meeting at Montreal, Canada, September 15, 1931.

She helps to influence the mother's attitude toward breast feeding if the medical opinion of the community indicates this to be desirable.

She helps the parents to establish a suitable routine for the child's day, emphasizing always its importance for the establishment of good health habits later.

She teaches the principles of protection against communicable disease and emphasizes the physician's advice regarding vaccination and diphtheria immunization.

Here as everywhere in public health, what can be done in the way of direct individual instruction counts the most.

The public health nurse has opportunities and obligations for general education of the public as to what constitutes adequate community provisions for infant care; as to what standard of care mothers have a right to expect and will, therefore, demand. Such public opinion is indispensable for attaining the highest standards and completest resources.

PRESCHOOL AGE

The public health nurse urges the continuance of systematic health supervision by the physician where it has begun in infancy. Where not, she naturally tries to get it started. Unfortunately, supervision often is not begun until children are ready to go to school, because in many places there are no organized health programs except the school program which is extended to include entrants into school or kindergarten.

The emphasis at this time is mostly on early correction of defects and immunization. The public health nurse tries through visits to the home to convince the parents of the reasonableness of the physician's recommendations. She tries, too, to tie up proper community facilities existing for each child with its family.

Problems during the preschool period, although they include physical care, become more and more psychological. The public health nurse, therefore, is expected to interpret the principles of child psychology and child training and to be effective must know parental education methods.

SCHOOL AGE

Public health nursing for children of school age is looked upon as a special branch because it is often administered by a non-health agency, the school. As a matter of fact, the services of so-called school nurses in the past have been confined to comparatively unimportant routine, mechanical duties within the school, which can hardly be called public health nursing. Public health nursing to children of this age is no different in its aims or services than to other age groups.

Children of this age happen to spend a large part of the day in a special environment—the school. The public health nurse adapts the principles and practices of public health nursing to another environment besides the home. She considers another group of persons besides the parents, namely, the teachers who share the responsibility of care and guidance of the children. Her supreme objective is to help educate children directly and through parents and teachers, how best to use the facilities which are part of their community, to make and keep themselves well, not only as school children but later as adults. Her contributions, however, must be consistent not only with the public health provisions of the community but with the general educational objectives of the school as well.

In the school the public health nurse's services can reasonably include the following:

Where health examinations are made by physicians, she assists so as to be intelligent about the physical status of each child, to interpret findings to parents and teachers, and to make plans for the child's improvement. She also supplies to the physician what information she has about the pupil and his environment.

Where there are no medical examinations the nurse may make periodic, individual inspections of pupils. This process of screening may be quite effective when carried on by one who has had much opportunity for observation of physical signs during her hospital experience. It is not necessary to be a high-powered or even an amateur diagnostician to be a very useful detector.

In places where it is not possible for physicians or nurses to hold regular inspections of pupils at reasonable intervals, it is quite clear that the teacher, who is with the children continuously, should be prepared to develop her powers of observation in regard to conditions which need attention. A nurse as a rule does a much better job when she uses her time in helping the teacher, by demonstration and otherwise, than in trying to do the inspections herself, alone. It is still necessary for teachers to learn on the job many of the things which we hope they will ultimately take over as a matter of course. The nurse is apparently at present one person to guide the teacher in health practices.

Advisory conferences with pupils, teachers and parents often have as their outcome good plans for the future health of the child. Conferences with parents in school are not to be regarded as substitutes for home visits, but as supplementary to them, for familiarizing the parents with the health plans of the school. Teacher-nurse conferences for discussion of all health aspects of the school program should be encouraged frequently and regularly.

Everyone realizes, of course, that the inspection, whether by physician, nurse, or teacher, is more than a procedure for finding out what is wrong. It is fully justified only when used as a means of giving personal, individual health instruction, then and there, and later, to the child, to the parent and to the teacher, and to guide in

the use of health resources of the community. The nurse may strengthen and emphasize individual instruction of this kind through group instruction, to bring out points which have been covered in the daily health education processes of the teacher, if any; if not, to stimulate the teacher's interest in such continuous processes.

Special inspections should include:

Inspections of children returning to school after illness—This inspection and subsequent readmission may be made by principal or teacher, usually upon written permission from the attending physician or health officer. The nurse has an educational function to perform in impressing parents with the importance of keeping the child at home when ill, and of calling a physician; in pointing out to teachers that children with sore throats, etc., should be at home, in spite of school attendance records.

Inspections of children referred to the nurse by the teacher—These are likely to range from pupils retarded scholastically to scratched hands and scuffed knees. Children are referred by the nurse to proper sources for expert diagnosis and treatment. Cases of minor injuries, scratches, etc., should be discouraged from coming to the nurse. If an accident has occurred in school, the teacher or pupils should be equipped to clean the wound and apply a dressing; if at home, the treatment devolves upon a family member. For emergency care of accidents there should be standing orders from the medical director or board, if there is one. Sometimes standing orders for treatment of scabies, impetigo and pediculosis are obtained so that the nurse's instructions to the parents and pupils are definitely based on a doctor's orders.

Inspection and exclusion of children for communicable disease—When communicable disease occurs, it is up to the nurse, where possible, to keep the children in school under her observation during the maximum incubation period through frequent inspections for suspicious signs. She is usually expected to exclude pupils when indicated. The principal and teachers may do it instead. There are various types of legal provisions for this type of inspection and exclusion, and the nurse has an opportunity to function in a teaching capacity toward teacher and principal no matter what the provisions.

Some degree of responsibility for the hygiene of the school environment usually falls to the nurse; in rural districts most of it. It is obviously important that teachers and pupils be made aware of the best use of physical facilities for safeguarding and promoting health at all times. As far as health education, in the sense of curricular activity, is concerned, suffice it to say that all public health nursing services can be made of high educational value as all services of the teacher can be made of high health value.

The public health nurse in school nursing service may be expected actually to participate in the formal teaching program by giving those courses or classes which involve nursing knowledge and technic. She should be able to interpret educational implications in health service to school administrators and teaching staff.

In the home her services for the child of school age are like those for other ages. She interprets instruction to parents and to children as to correction and treatment of defects, control of illness, and promotion of health. Only by thoroughly knowing the home can she help to make intelligent and consistent plans for the child's health.

The nurse must coördinate home and school with all health resources of the community if her work is to be of permanent significance. She consults local medical and dental practitioners, who are the unorganized health resources of the community, to explain to them what the school health program objectives are and to show that they in no way conflict with the prerogatives of private medicine and dentistry—quite the contrary. She solicits the advice of these practitioners in regard to individual needs of school children and the whole school health program.

Where there are no organized resources for health and social service, a good public health nurse can do much to help promote and develop them, not for the school only but for the whole community. If these agencies already exist, complete coöperation with them strengthens not only the agencies but the health service to each school child.

Of paramount importance but often neglected is the establishment of advisory committees representing the school, the health and social agencies, to act in an advisory capacity to the whole school health program, including nursing. It seems of particular usefulness, when it is a board of education service. Here the potentialities of public health service, and type of service reasonable to expect, are often less understood than by health agencies. Understanding can be influenced by an enlightened board or committee. There are other tangible services for such committees which are quite familiar.

Where the public health nurse is expected to include secondary schools in her service, she has the same objectives and functions as she had in elementary schools, although her methods and emphasis are somewhat different. She uses the individual counsellor method more than joint conference or home visit, since the student of secondary school age is gradually becoming more responsible for the care of his own body, the correction of his own health defects and for protecting himself and others against disease. If she understands the manifold psychological problems peculiar to adolescence and is sympathetic with the confusions characteristic of this age, she has a unique opportunity for individual guidance.

At the risk of being tiresome I have gone into what must seem unnecessary detail about public health nursing service for the school

child because there is such variety and confusion of opinion as to what school nursing can reasonably be, and as to how nurses should function in relation to the school. The nurse's services during the preschool period, including infancy, are fairly simple and obvious. When it comes to the school child things seem more complicated because of the probability of non-health agency administration, and because instead of serving directly from health agency or agent to home, the nurse must include another group of individuals, the teachers, and another institution, the school, no matter what the administration under which she functions.

If the nurse can, with the professional equipment which she brings to public health, in any way help realize the general aim of having all children everywhere physically and mentally ready to go to school, and of securing health supervision without break from before birth through adolescence, I feel she will have justified her existence. If she will use her professional equipment to teach what can be done and how to those who have the children under their guidance from day to day, instead of doing for the child what the parent can or should do, she will become a much more potent factor in health education.

If all workers in the field of child health, particularly for school children, had clearly defined aims there could be no haggling over prerogatives and no fears of usurping one another's jobs.

Italy's Courses in Child Hygiene

THE National Children's Bureau of Italy has ordered its provincial branches to organize popular courses on maternal and infant hygiene for girls of 16 to 18 years, according to *Maternity ed Infanzia,* of Rome. The courses are to be given preferably in day nurseries and similar child welfare institutions, so that the girls may have practical training as well as theoretical instruction. No diplomas will be awarded in these courses. The granting of diplomas in this subject is restricted to graduates of special courses given for those who intend to take up maternal and infant welfare as a profession.—U. S. Children's Bureau, Washington, D. C.

Significance of Bone Trabeculae in the Treatment of Lead Poisoning*

Lead Studies XVII

JOSEPH C. AUB, M.D., GEORGE P. ROBB, M.D.
AND ELSIE ROSSMEISL

Medical Laboratory, Collis P. Huntington Memorial Hospital, Harvard Medical School, Boston, Mass.

IT has been found easier to control the metabolism of lead in the human organism since it was learned that the lead stream runs parallel to the calcium stream.[1] It is now generally agreed that lead is stored in the bones for long periods of time. From this storage place it is gradually liberated, just as calcium is liberated, and therefore may be found in the excreta over a period of months and probably in small quantities for years. This gradual elimination of lead is the result of normal exchange of the inorganic salt content of bone.

In periods of metabolic emergency such as occur during pneumonia, alcoholic debauches, operations, etc., it has been observed that toxic lead episodes develop in individuals exposed to lead but who have previously had no symptoms. In such metabolic emergencies, therefore, the organism may be exposed to an increased stream, which must be derived from the bones. This lead stream can also be liberated, as shown by Aub and Minot,[1] and Hunter and Aub,[2] by using other methods which draw calcium from the bones. Since this treatment was devised, the question has often been asked whether it is preferable to withdraw lead by such therapy or whether it would be wiser to allow it to be excreted in the natural course of metabolic events over a long period of time. The work here reported presents further evidence in favor of removing this stored lead.

Inasmuch as lead metabolism runs parallel to that of calcium, the lead problem becomes essentially a problem of calcium metabolism. In recent work upon the function of bones, Bauer, Aub, and Albright [3] and later, Gyorgy,[4] demonstrated that bone structure could obviously

* Read before the Industrial Hygiene Section of the American Public Health Association at the Sixtieth Annual Meeting at Montreal, Canada, September 15, 1931.

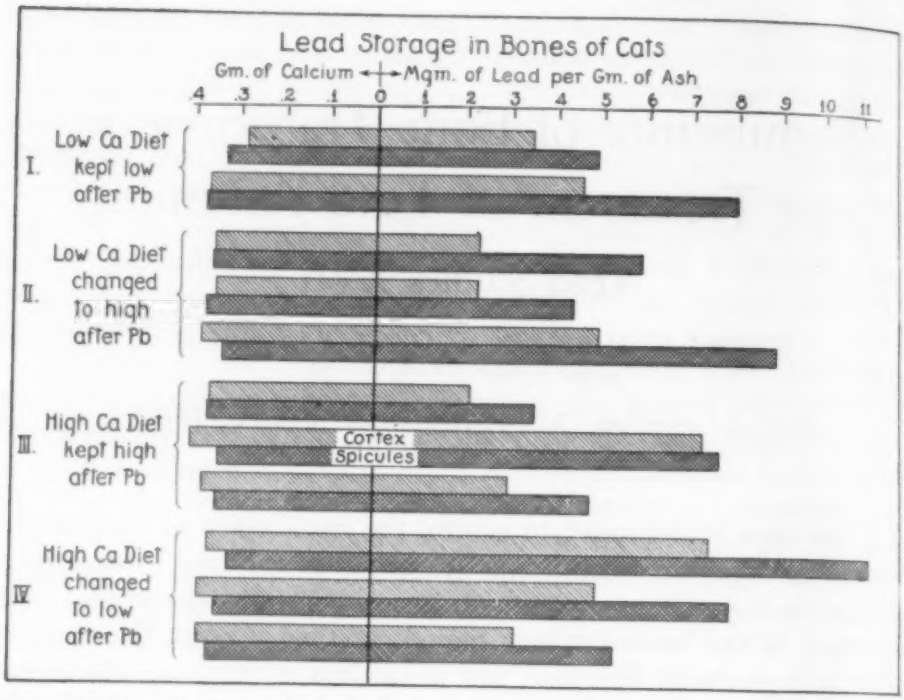

Lead Storage in Bones of Cats
Gm. of Calcium ← → Mgm. of Lead per Gm. of Ash
4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11
I. Low Ca Diet kept low after Pb
II. Low Ca Diet changed to high after Pb
III. High Ca Diet kept high after Pb
Cortex
Spicules
IV High Ca Diet changed to low after Pb

FIGURE I—A graphic presentation of the second group of animals. Both calcium and lead determinations were made in these experiments

be divided into two parts: the hard shaft of the bones needed for body support, and the bone trabeculae which, surrounded by marrow, are concentrated near the epiphyses. These trabeculae serve in large part as the readily available storehouse to supply the body with fixed base for metabolic needs, and they largely disappear when the organism is experimentally depleted of calcium by means of a low calcium diet plus acids or parathormone. We are, therefore, faced by this situation: In the emergencies which sometimes precipitate acute toxic lead episodes, inorganic salts may be withdrawn from the trabeculae of bones. It is, therefore, of interest to know how much lead is stored in these trabeculae.

METHODS

Cats were used in this study. Some of them were kept on constant, low calcium diets which consisted of meat, occasionally salmon and liver, and water. Others were on a high calcium diet, which consisted of the same diet with milk in place of the water. Cats will remain in excellent condition on either diet for a period certainly well over a year. After the animals had remained on such a diet for 7 to

9 weeks, approximately 200 mg. of neutralized lead carbonate was injected by syringe directly into the trachea and so allowed to gravitate into the lung. In some of the animals this dose was repeated after several months. After varying lengths of time these animals were killed and autopsied. The long bones were sawed in half and freed from bone marrow by digestion with duodenal content or with purified pancreatic ferment. In this way the bones could be thoroughly cleaned without manipulation. The trabeculae, particularly those at the epiphyseal ends, were then cleaned and separated from the cortex. These were analyzed for calcium and lead. The regular lead analysis, as described by Fairhall,[5] with modification for analysis of the bones as described by Minot,[6] was utilized. Fiske's calcium method [7] was used.

RESULTS

Fifteen animals were so studied, all of which were killed within 4 months after lead was first administered. The results of the analyses are shown in Table I. No conclusions can be reached in regard to the amount of lead stored in different animals, because the amount of lead which reached the lungs, as well as the amount which was absorbed from the lungs, probably varied considerably. The effects of diet, therefore, are not clear in these observations. The interesting finding is that there was a higher concentration of lead in the trabeculae as compared to the bone shaft in all but one animal, an average increased concentration of 78 per cent. This finding becomes more significant when it is observed that the calcium content of the ashed bone is essentially the same in both places—an average of 365 mg. in the cortex and 350 mg. in the trabeculae per gm. of ash. The increased concentration of lead, therefore, is increased not only relative to the total weight of bone but also in proportion to the quantity of calcium present. It

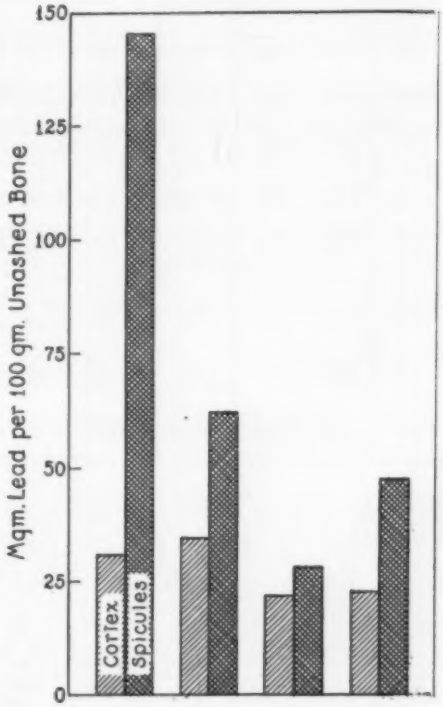


FIGURE II—A graphic presentation of the lead content of the bones in animals 101, 102, 103 and 104

TABLE I.

Animal No.	Ca Intake		Duration of life After Pb	Cortex				Trabeculae				Remarks
				Wt. of Bone Sample		Content per Gms. Ash		Wt. of Bone Sample		Content per Gms. Ash		
	Before Pb	After Pb		Before Ashing gms.	After Ashing gms.	Pb mgm.	Ca gms.	Before Ashing gms.	After Ashing gms.	Pb mgm.	Ca gms.	
101	Low	On Low for 7 da. Then High	66 days	3.949				2.097	1.257	0.967		2 inj. of Pb, Apr. 20 & June 15. Died 10 da. after 2nd inj.
102	Low	High	97 days	3.928	2.613	0.494		2.800	2.027	2.007		2 inj. of Pb, Apr. 20 & June 15. Killed 41 da. after 2nd inj.
124	Low	High	4 mo. 12 days	23.641	15.845	0.229	0.354	5.532	2.620	0.586	0.359	2nd inj. of Pb after 4 mos. Killed 12 days later.
128	Low	High	1½ mo.	24.900	16.890	0.225	0.351	5.060	2.410	0.438	0.373	Died 1½ mos. after Pb inj.
148	Low	High	4 mo.	19.495	12.555	0.494	0.382	3.965	2.055	0.888	0.336	Killed 4 mo. after Pb inj.
103	Low	Ate nothing	17 days	7.083	4.898	0.329		4.339	2.295	0.891		Died 18 days after Pb inj.
104	Low	Low	97 days	5.311	3.545	0.310		7.561	4.119	0.529		2 inj. Apr. 20 & June 15. Killed 41 days after 2nd Pb inj.
129	Low	Low	2 mo.	23.545	15.320	0.345	0.287	7.805	3.450	0.488	0.331	Died 2 mo. after Pb inj.
130	Low	Low	4 mo.	23.350	15.397	0.456	0.369	5.598	2.506	0.798	0.375	Killed 4 mo. after Pb inj.
126	High	High	12 days	27.135	18.574	0.211	0.362	1.432	1.177	0.354	0.367	Died 12 days after Pb inj.
134	High	High	21 days	14.674	9.305	0.725	0.404	8.430	3.280	0.761	0.342	Died 21 days after Pb inj.
154	High	High	4 mo. 12 days	27.166	18.206	0.299	0.378	4.795	2.240	0.478	0.348	2nd inj. of Pb after 4 mo. Killed 12 days later.
127	High	Low	1½ mo.	27.039	18.130	0.742	0.362	6.026	2.820	1.106	0.319	Died 1½ mo. after Pb inj.
140	High	Low	4 mo. 12 days	22.620	14.605	0.494	0.383	6.065	2.665	0.791	0.345	2nd inj. after 4 mo. Killed 12 days later.
149	High	Low	5 days	11.000	7.134	0.319	0.381	1.476	0.666	0.536	0.360	Died 5 days after inj.

is clear that in these animals lead was present in greater concentration just where it offered the greater danger, for it was stored in relatively large quantities in the areas which liberate inorganic salts when these are needed for the metabolism of the body.

A confirmatory observation was found in children. In a case of fatal lead poisoning, already reported by Dr. Edward C. Vogt,[8] we analyzed the bones for lead and calcium. The cleaned bones were divided into three parts: the dense area at the end of the bone, the spicules from the medulla, and the hard cortical bone. The analyses

of the second series were obtained from the bones of a child who died from appendicitis. X-ray studies had demonstrated a "lead line" in the bones, but the history disclosed no symptoms of lead intoxication. The analyses are shown in Table II. It is clear that the lead

TABLE II.

Area	Weight of Bone Analyzed gms.		Lead per Gm. of Bone mgm.		Calcium per Gm. of Bone gms.	
	Case I	Case II	Case I	Case II	Case I	Case II
Cortex	3.605	7.8409	0.122	0.124	0.202	0.234
Medullary Spicules	2.860	2.3819	0.178	0.313	0.133	0.228
Metaphyses	3.652	2.2662	0.527	0.243	0.124	0.214
Epiphyses		4.5123		0.203		0.204

concentration, particularly in relation to the calcium, is far greater in the areas where bone growth is occurring and also in the trabeculae. The work of Dr. Vogt further shows that, in spite of removal from lead exposure, the dense shadows where the greater amount of lead is present move onward with the epiphyseal line. This indicates dissolving of the lead in its original area of deposit and redepositing of it in areas of bone growth—an obvious source for a continuous lead stream.

DISCUSSION

Previous experiments have indicated that the bone shafts, in all probability, metabolize at a fairly constant rate without much influence from acute metabolic variations, while inorganic salts in the trabeculae are easily liberated. The therapy of "deleading" described some years ago by Aub and Minot [1] also strikingly reduces the number of bone trabeculae. The experiments here reported indicate that there is a relatively large deposit of lead in these areas of bone which most readily respond to metabolic change, and it is this lead which therapy probably liberates in increased amounts in the excreta. It is clear, however, from Vogt's X-ray studies that, in children at least, not all this lead is excreted but that as bones grow it is liberated and then redeposited along the areas of growth.

From the point of view of therapy of lead poisoning, it seems clear that it is better to have the patient relatively free from lead in areas which may readily allow it to circulate. This evidence, therefore, seems further to establish the value of deleading. To be able to liberate some readily available lead and then to replace this with uncontaminated calcium salts would seem to be obviously desirable.

CONCLUSIONS

Lead stored in the bones is present in higher concentration in the trabeculae than it is in the cortex.

In children it is present in the highest concentration in the areas where calcium is being most rapidly deposited.

The practical value of these observations, indicating the value of accelerating lead excretion, is discussed.

REFERENCES

1. Aub, Joseph C., Fairhall, Lawrence T., Minot, A. S., and Reznikoff, Paul. *Lead Poisoning*, 1926.

2. Hunter, Donald, and Aub, Joseph C. Lead Studies. XV. The Effect of the Parathyroid Hormone on the Excretion of Lead and of Calcium in Patients Suffering from Lead Poisoning. *Quart. J. Med.*, XX:123 (Jan.), 1927.

3. Bauer, Walter, Aub, Joseph C., and Albright, Fuller. Studies of Calcium and Phosphorus Metabolism. V. A Study of the Bone Trabeculae as a Readily Available Reserve Supply of Calcium. *J. Exper. Med.*, XLIX:145–161 (Jan.), 1929.

4. Gyorgy, P. Die Besondere Stellung der Subepiphysaren Knochenschicht im Kalkstoffwechsel als Eines Leicht Mobilisierbaren Kalkspeichers. *Klin. Wchnschr.*, IX:102 (Jan.), 1930.

5. Fairhall, Lawrence T. Lead Studies: I. The Estimation of Minute Amounts of Lead in Biological Material. *J. Indus. Hyg.*, IV:9–20, 1922.

6. Minot, A. S. Lead Studies. V. A. The Distribution of Lead in the Organism after Absorption by the Gastro-Intestinal Tract. *J. Indus. Hyg.*, VI:125 (Aug.), 1924.

7. Fiske, Cyrus H., and Logan, Milan A. The Determination of Calcium by Alkalimetric Titration. II. The Precipitation of Calcium in the presence of Magnesium, Phosphate, and Sulfate, with Applications to the Analysis of Urine. *J. Biol. Chem.*, XCIII:211 (Sept.), 1931.

8. Vogt, Edward C. A Roentgen Sign of Plumbism. *Am. J. Roentgenol.*, XXIV:550 (Nov.), 1930.

Seasonal Incidence of Whooping Cough in the United States*

G. E. HARMON, M.D., F.A.P.H.A.

Department of Hygiene and Bacteriology, School of Medicine, Western Reserve University, Cleveland, O.

THE seasonal incidence of whooping cough has been studied and discussed by many epidemiologists. Hirsch [1] states that for certain European countries and cities the maximum seasonal incidence of whooping cough occurs in the autumn (September, October and November) or in the spring (March, April and May). Crum [2] states that for Aberdeen, Scotland, New York City and Philadelphia the attack rate is highest in the spring and lowest in the autumn. Luttinger,[3] who dealt with data relating to New York City, considered the relation of whooping cough to season paradoxical because its greatest prevalence occurred during the spring and summer rather than during the fall and winter when respiratory infections are most prevalent. He pointed out that the curves of the seasonal incidence more nearly coincide with those of the diarrheal than with those of the respiratory diseases.

In a study of the epidemiology of whooping cough in Cleveland, the author [4] presented data for 1906–1916 which showed that the disease had its greatest incidence in the spring and early summer. Godfrey,[5] who speaks of whooping cough as an epidemiological anomaly, gives the monthly incidence for New York State for 1913–1917, and shows that the peak of maximum incidence falls most frequently in the winter months. He found no evidence of a distinctive summer increase.

Collinson and Councell [6] have recently published data for Maryland for 1921–1929, from which it appears that the percentage monthly incidence of whooping cough for that state is maximal during March, April, May, and July. While the conclusions of the investigators cited may be summarized in the statement that the peak of the incidence of whooping cough tends to fall in the spring or early

* Read before the Vital Statistics Section of the American Public Health Association at the Sixtieth Annual Meeting at Montreal, Canada, September 14, 1931.

summer months, still there is evidence that variations from this type of distribution are not infrequent.

Since 1922, the monthly incidence of whooping cough for a number of states has been published in *Public Health Reports*. An analysis of these data was undertaken to determine the type or types of the seasonal distribution which were occurring in the United States. Since the author [7, 8] pointed out that the peak of the seasonal prevalence of diphtheria, measles, scarlet fever, and typhoid fever occurs earlier in the south than in the north, the data were analyzed with the idea of determining also whether a given type of distribution was associated with a definite geographical or climatic area.

TABLE I

WHOOPING COUGH MORBIDITY AND MORTALITY BY STATES, 1922-1929

States	Total Cases	Total Deaths	Fatality Rate	State	Total Cases	Total Deaths	Fatality Rate
1	2	3	4	5	6	7	8
Vermont	13,264	189	1.4	Maryland	29,042	1,258	4.3
Wisconsin	56,262	911	1.6	Pennsylvania	119,213	5,160	4.3
Mississippi	100,061	1,690	1.7	Maine	10,708	546	5.1
Kansas	25,948	700	2.7	Oregon	4,067	223	5.5
Washington	15,285	425	2.8	North Dakota	4,038	231	5.7
Dist. of Columbia	6,002	176	2.9	Minnesota	13,844	911	6.6
New York	139,315	4,163	3.0	Nebraska	4,948	447	9.0
North Carolina	88,722	2,664	3.0	Missouri	20,909	1,994	9.5
Connecticut	21,788	681	3.1	West Virginia	15,750	1,607	10.2
New Jersey	55,190	1,684	3.1	Tennessee	16,328	1,892	11.6
Illinois	79,647	2,620	3.3	Arkansas	9,054	1,101	12.2
Massachusetts	63,125	2,101	3.3	Florida	4,336	529	12.2
Michigan	59,831	2,024	3.4	Alabama	12,941	2,175	16.8
Ohio	85,000	3,310	3.9	Louisiana	4,987	1,425	28.6
California	52,408	2,213	4.2				

The study was restricted to those states which had a total of 4,000 cases or more reported during 1922–1930, and for which morbidity data had been published for each month of the period. Twenty-nine states listed in Table I, meeting these requirements, were included. It should be borne in mind that because of incompleteness of reporting, the data used represent only a sample of the total cases occurring in any individual state, and that the relative size of this sample varies as between the different states. Sydenstricker and Hedrich [9, 10] found that in Hagerstown, Md., 30.5 per cent of the cases of whooping cough seen by physicians were reported, and only 16.8 per cent of all

cases were reported. Green and Moorehouse [11] stated that 78 per cent of the deaths from whooping cough that occurred in Cleveland during 1923–1928 had been reported previously as cases.

While it is recognized that the case-fatality rate depends upon many factors, and therefore may not be an accurate index of completeness of reporting, fatality rates are presented in Table I (columns 4 and 8) to serve as a rough comparative index. The period covered by this table does not include 1930 because information in regard to deaths was not available. It is believed, since there is no evidence that physicians report cases of whooping cough more completely at one season than another, that the data used may be taken as a random sample of all the cases that occurred, as far as seasonal distribution is concerned. The samples available were also considered to be large enough to give a reliable indication of seasonal distribution.

A time series for 1922–1930 composed of the numbers of cases of whooping cough reported in successive months, adjusted throughout to a month of 31 days, was set up for each state. Each series was followed through, and for each complete yearly swing or wave the month of maximum incidence and the month of minimum incidence were noted. In this procedure all yearly waves were included without regard to whether they were epidemic or non-epidemic in character. From Table II (columns 2 and 6) it will be seen that, when all states are considered, March appears most frequently as the month of maximum incidence, and October as the month of minimum incidence. It is during the first 7 months of the year that months of maximum incidence most frequently occur, while it is during the last 4 months that we find most commonly months of minimum incidence. Comparing the northern group of states (Connecticut, Massachusetts, Maine, Michigan, Minnesota, New York, North Dakota, Wisconsin, and Vermont) with the southern group (Alabama, Arkansas, Florida, Louisiana, Mississippi, North Carolina, and Tennessee), Table II indicates that while the month of minimum incidence in both groups occurs at about the same time of year, the month of maximum incidence tends to come earlier in the northern than in the southern group.

This rough method of analysis gives no idea concerning the shape of the curve which depicts the monthly distribution of cases throughout an entire year. In order to obtain information on this point the distribution of cases by months for a year of median—that is typical—incidence is desirable. The method adopted for obtaining such a year is that discussed by the author [8, 12] in outline as follows:

October being most frequently the month of minimum incidence, the so-called epidemiological year was considered to run from October

TABLE II

FREQUENCY DISTRIBUTION OF THE MONTHS OF MAXIMUM AND MINIMUM INCIDENCE OF WHOOPING COUGH, 1922-1930

Month	Maximum Incidence			Month	Minimum Incidence		
	Twenty-nine states	Nine northern states	Seven southern states		Twenty-nine states	Nine northern states	Seven southern states
1	2	3	4	5	6	7	8
Oct.	3	3		Mar.	4	3	
Nov.	6	4		Apr.	4	3	
Dec.	5	4		May	4		
Jan.	35	18	4	June	10	8	
Feb.	21	5	5	July	5	3	1
Mar.	46	13	14	Aug.	18	8	3
Apr.	36	6	14	Sept.	47	14	12
May	39	7	13	Oct.	95	28	24
June	28	6	6	Nov.	32	3	10
July	25	4	7	Dec.	37	10	11
Aug.	10	6		Jan.	3		1
Sept.	6	4		Feb.	1		1
Total	260	80	63	Total	260	80	63
Most frequent month	Mar.	Jan.	Mar. & Apr.	Most frequent month	Oct.	Oct.	Oct.

1 of one year, to September 30 of the next. The time series representing the monthly incidence of whooping cough for each state included 8 such epidemiological years, from October 1, 1922, to September 30, 1930. Each month was then treated independently. For any state, for example, the figures representing the incidence of the 8 Octobers respectively were placed in an array and a central value determined by means of parabolic smoothing. The data for the other months were treated in a similar way. The 12 central values thus obtained (really approximations to the monthly median incidence in each case) were added together and the total considered to represent for the period involved a year of median incidence. The median incidence for each month was next expressed as a percentage of this total. The 12 percentages thus obtained indicate the seasonal

distribution of cases in a year of median incidence and when plotted give a seasonal curve which may be regarded as typical. The results for each state are presented in Tables III, IV, and V.

TABLE III

PERCENTAGE DISTRIBUTION OF WHOOPING COUGH BY MONTHS FOR A YEAR OF MEDIAN INCIDENCE FOR CERTAIN STATES AND GROUPS OF STATES

Month	Group I					Group II					Not grouped			All 29 states combined
	Conn.	N. J.	N. Y.	Pa.	States combined	Me.	Mass.	Nebr.	W. Va.	States combined	D. C.	N. D.	Vt.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Jan.	12.7	10.3	10.0	9.3	9.1	10.9	12.2	7.7	11.6	11.8	7.9	6.9	12.0	9.0
Feb.	9.5	9.4	10.3	10.1	10.0	12.9	11.5	12.1	9.7	11.6	8.6	10.8	10.7	10.0
Mar.	9.6	9.3	10.1	10.2	9.9	12.1	12.3	11.5	12.7	12.2	10.6	9.4	7.8	10.9
Apr.	9.1	8.8	9.5	8.6	9.7	8.7	10.4	9.8	10.3	10.0	7.9	10.2	9.1	10.4
May	7.7	8.7	9.0	8.0	8.7	8.3	9.6	11.0	9.6	8.8	9.6	8.7	5.1	9.9
June	7.3	8.8	8.1	7.8	8.6	5.7	7.9	7.8	9.4	7.3	8.3	10.6	7.2	9.4
July	7.8	8.7	8.0	8.8	8.4	6.7	6.5	9.1	9.5	6.6	10.2	7.3	6.2	8.5
Aug.	7.0	7.1	6.9	8.4	7.2	3.9	5.2	7.4	7.7	5.4	6.9	7.9	4.0	7.0
Sept.	6.3	6.2	6.5	7.8	6.6	4.9	4.8	7.8	4.6	5.6	6.1	9.6	5.7	5.9
Oct.	6.3	6.0	5.9	6.4	6.1	7.2	4.3	4.3	3.9	5.3	7.5	7.7	8.4	5.5
Nov.	8.9	8.0	7.7	7.4	7.7	9.7	6.6	6.4	4.6	7.1	6.5	6.4	11.6	6.5
Dec.	8.1	8.7	7.9	7.4	8.1	9.0	8.6	5.1	6.3	8.3	10.0	4.6	12.4	6.9
Max. month	Jan.	Jan.	Feb.	Mar.	Feb.	Feb.	Mar.	Feb.	Mar.	Mar.	Mar.	Feb.	Dec.	Mar.
Min. month	Sept. Oct.	Oct.	Oct.	Oct.	Oct.	Aug.	Oct.	Oct.	Oct.	Oct.	Sept.	Dec.	Aug.	Oct.
Total cases	2,438	6,857	18,031	15,017	43,356	1,396	8,155	652	1,908	12,678	521	520	1,539	146,329

The various time series were next combined to obtain a composite time series representing the incidence of whooping cough in all 29 states. The percentage monthly distribution of cases for a year of median incidence for this series is given in Table III, column 15. The corresponding curve is shown in Graphs I and II. From the percentages and the graphs it appears, when all the states are considered as a unit, that the maximum incidence occurs in March and the minimum incidence in October. It was thought, however, that the states might be classified according to type of seasonal curve and that some of these types might differ from the general type curve characteristic of all states combined.

When a classification of individual states upon this basis was attempted, it was found that with the exception of the District of Columbia, North Dakota, and Vermont, all fell in one or another of 4 groups. Seasonal curves for Connecticut, New Jersey, New York,

TABLE IV

PERCENTAGE DISTRIBUTION OF WHOOPING COUGH BY MONTHS FOR A YEAR OF MEDIAN INCIDENCE FOR STATES OF GROUP III

Month	Ala.	Ark.	Calif.	Fla.	La.	Minn.	Miss.	N. C.	Ore.	Wash.	States combined
1	2	3	4	5	6	7	8	9	10	11	12
Jan.	7.9	5.5	7.0	5.1	6.0	8.0	7.3	6.8	5.0	5.8	7.4
Feb.	9.1	8.7	8.5	9.1	9.1	8.6	10.5	9.5	7.2	9.1	9.5
Mar.	9.6	10.3	11.0	13.3	9.5	11.9	11.6	11.0	7.5	12.9	11.5
Apr.	11.1	11.7	12.8	14.5	12.3	11.0	13.6	11.6	13.0	14.9	12.6
May	12.3	11.9	16.0	17.3	13.5	11.9	12.1	12.9	20.0	15.7	12.8
June	12.5	12.0	11.3	12.6	12.1	8.7	11.8	12.2	13.7	10.9	11.3
July	11.0	10.8	8.5	7.4	10.1	7.5	7.7	10.8	9.4	9.7	8.7
Aug.	7.1	8.8	6.4	5.7	6.9	7.1	5.1	7.0	7.6	7.2	6.0
Sept.	4.4	4.0	5.4	5.5	5.4	6.3	4.8	4.8	5.0	3.4	4.9
Oct.	5.2	5.0	4.0	2.5	3.6	6.3	4.3	4.7	4.1	3.6	4.9
Nov.	4.3	4.4	4.6	3.8	5.6	6.6	5.5	4.5	3.9	3.8	5.3
Dec.	5.4	7.0	4.5	3.2	6.0	6.1	5.8	4.1	3.5	3.0	5.2
Maximum month	June	June	May	May	May	March & May	Apr.	May	May	May	May
Minimum month	Nov.	Sept.	Oct.	Oct.	Oct.	Dec.	Oct.	Dec.	Dec.	Dec.	Oct. & Sept.
Total cases	1,739	1,049	7,251	526	504	1,724	12,935	10,688	460	1,991	39,862

and Pennsylvania were similar in that they were of low amplitude, were high during January, February, March, and April, and low during August, September, and October. These states comprise Group I. Curves for Maine, Massachusetts, Nebraska, and West Virginia (Group II) were found to have a greater amplitude but otherwise they resemble those of Group I. Data in Table III and Graph I make it possible to compare the curves for each of these groups with that for the 29 states combined. It will be noted that the curve for the 29 states combined is highest during February, March, April, and May, the period of high incidence occurring later in the year than is the case for either Group I or Group II. In interpreting Table III, and also Tables IV and V, it is to be remembered that the figures represent a median or are based upon a median. The characteristics

TABLE V

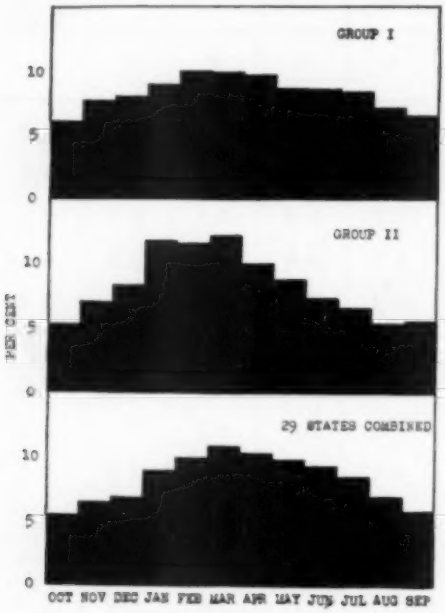
PERCENTAGE DISTRIBUTION OF WHOOPING COUGH BY MONTHS FOR A YEAR OF MEDIAN INCIDENCE FOR STATES OF GROUP IV

Month	Ill.	Kans.	Md.	Mich.	Mo.	Ohio	Tenn.	Wis.	States combined
1	2	3	4	5	6	7	8	9	10
Jan.	9.3	7.8	8.3	8.5	6.2	9.4	8.4	8.5	9.0
Feb.	9.5	10.0	9.0	9.1	8.9	10.5	10.9	9.1	9.5
Mar.	9.8	10.7	10.0	8.7	11.2	9.2	10.2	9.2	9.6
Apr.	9.0	9.8	8.9	8.8	9.7	8.9	10.3	9.2	9.1
May	8.7	8.4	9.1	10.1	10.2	9.3	8.8	7.3	9.0
June	9.3	13.0	10.0	10.2	11.2	10.2	13.2	6.5	9.7
July	9.6	10.2	11.4	10.2	11.4	11.0	10.4	9.4	9.9
Aug.	7.8	6.6	7.6	9.2	7.0	8.6	5.7	10.2	8.4
Sept.	6.3	5.3	5.6	7.3	6.1	5.9	6.1	8.6	6.8
Oct.	6.0	5.5	6.0	5.2	6.0	4.9	5.4	5.9	5.7
Nov.	7.0	7.4	7.4	6.4	7.5	5.8	4.8	8.7	6.6
Dec.	7.8	5.4	6.8	6.4	4.6	6.3	5.7	7.5	6.7
Maximum month	Mar.	June	July	June & July	July	July	June	Aug.	July
Minimum month	Oct.	Sept.	Sept.	Oct.	Dec.	Oct.	Nov.	Oct.	Oct.
Total cases	10,041	3,410	3,585	7,431	2,519	9,766	1,731	7,076	46,785

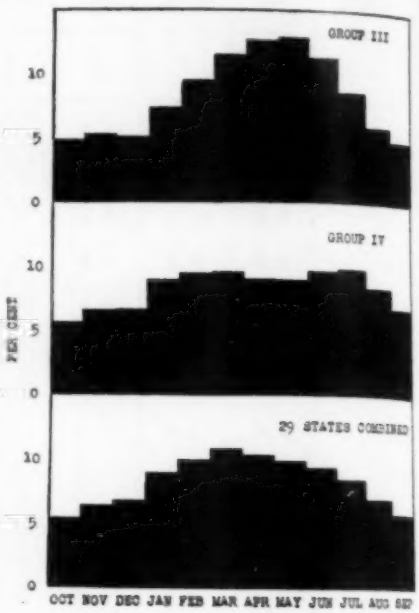
of this average are such that the median number of cases for a group of combined states is not necessarily equal to the sum of the median number of cases of the individual states included.

Alabama, Arkansas, California, Florida, Louisiana, Minnesota, Mississippi, North Carolina, Oregon, and Washington fall into Group III. The seasonal curve for each of these states is high during April, May, and June, and low during September, October, November, and December. Each curve has a high amplitude. The curves for Illinois, Kansas, Maryland, Michigan, Missouri, Ohio, Tennessee, and Wisconsin (Group IV) differ from those of Group III in that their amplitude is less, and that there is a tendency for the curves to be bi-modal with a high period during February and March and another during June and July. Data for these groups are presented in Tables

IV and V. From a study of Graph II it will be seen that the high part of the composite curves for Groups III and IV comes later in the year than is the case for the curve of all 29 states combined.



GRAPH I. PERCENTAGE DISTRIBUTION OF WHOOPING COUGH BY MONTHS FOR A YEAR OF MEDIAN INCIDENCE FOR GROUPS OF COMBINED STATES.



GRAPH II. PERCENTAGE DISTRIBUTION OF WHOOPING COUGH BY MONTHS FOR A YEAR OF MEDIAN INCIDENCE FOR GROUPS OF COMBINED STATES.

SUMMARY AND DISCUSSION

The results of the analysis of the data for 29 states included in this study, for 1922–1930, may be summarized as follows:

Seasonal incidence of whooping cough is low during the last 4 months of the year, October being the most frequent month of minimum incidence.

Variations are found as regards the month of maximum incidence when groups of combined states are compared. For Groups I and II, seasonal incidence is highest during the first 4 months, the peaks coming in February and March respectively. The curve for Group II has a lower amplitude. For Group III, seasonal incidence is highest during March, April, May, and June, with the peak coming in May. For Group IV, seasonal incidence tends to be bi-modal, being high during February and March and also June and July.

None of these three types of seasonal distribution of whooping cough seems to be associated with any definite geographical area or unit, composed of states having somewhat similar climatic conditions. However, the southern states and those on the Pacific coast have a seasonal curve with a late peak in May (Group III). Furthermore, the northern states with the exception of Minnesota (March and May), Michigan (June and July), and Wisconsin (August) have an early peak for the most part in January or February. If it be true that the peak

of incidence of whooping cough in the south tends to occur in May and in the north in January or February, then the relation of these high points to one another is the reverse of what has been found to be the case for such respiratory infections as diphtheria, measles, and scarlet fever.

NOTE: The author wishes to acknowledge his indebtedness to Mrs. Donald Eveleth for assistance in making arithmetical calculations and in drawing up the tables and graphs.

REFERENCES

1. Hirsch, August. *Handbook of Geographical and Historical Pathology.* The New Sydenham Society, London. Vol. 3, p. 36, 1886.
2. Crum, Frederick S. A Statistical Study of Whooping Cough. *A. J. P. H.*, 5:994 (Oct.), 1915.
3. Luttinger, Paul. The Epidemiology of Pertussis. *Am. J. Dis. Child.*, 12:290 (Sept.), 1916.
4. Harmon, G. E. (In collaboration with the members of the third year class in Hygiene). Epidemiology of Whooping Cough in Cleveland for 1915 and 1916. *Cleveland Med. J.*, 16:487 (July), 1917.
5. Godfrey, E. S., Jr. Epidemiology of Whooping Cough. *New York State J. Med.*, Dec., 1928.
6. Collinson, John, and Councell, Clara. Whooping Cough in Maryland. Bur. of Vital Statistics, *Bull. No. 1*, Maryland State Dept. of Health, 1931, p. 10.
7. Harmon, G. E. A Comparison of the Seasonal Prevalence of Diphtheria, Measles and Scarlet Fever in Different Latitudes. *J. Prev. Med.*, 1:327 (Mar.), 1927.
8. Harmon, G. E. Seasonal Distribution of Typhoid Fever—Southern and Northern States. *A. J. P. H.*, 20:395 (Apr.), 1930.
9. Sydenstricker, Edgar. The Reporting of Notifiable Diseases in a Typical Small City. *Pub. Health Rep.*, 41:2186 (Oct.), 1926.
10. Sydenstricker, Edgar, and Hedrich, A. W. Completeness of Reporting of Measles, Whooping Cough and Chickenpox at Different Ages. *Pub. Health Rep.*, 44:1537 (June), 1929.
11. Green, Howard W., and Moorehouse, Geo. W. Corrected Fatality Rates in Public Health Practice. *Pub. Health Rep.*, 45:169 (Jan.), 1930.
12. Harmon, G. E. Methods of Obtaining a Standard of Disease Prevalence for a Mid-Period. *J. Prev. Med.*, 2:293 (July), 1928.

Medical Conditions in Soviet Russia

IN Russia disease is no longer a private and personal matter. Since every inhabitant is a social and economic unit, disease is looked upon as harmful to the State, and restoration of the sick to health, the prevention of disease, and the cultivation of positive health are regarded as State responsibilities. In other words, Soviet Russia is witnessing, for the first time, the efforts of a thorough-going State medicine.

Not that private practice has been entirely abolished in Soviet Russia, for though every physician is required to work 6 hours daily for the State, he may, after that work has been done, treat private patients and be paid for such treatment if any desire him. It has not yet been possible fully to realize the ideal of making competent medical care accessible and free to all in the institutions organized by the State, and it is because of the delay due to insufficient personnel that the doctors still have some private practice. It is believed, however, that private practice is doomed ultimately to be wiped out as the numbers of physicians increase and as State institutions are multiplied.—Lewellys F. Barker, M.D., *The Scientific Monthly*, 35, 1:25 (July), 1932.

EDITORIAL SECTION

Expressions of opinion and statements of supposed facts are published on authority of the writer under whose name they appear, and are not to be regarded as expressing the views of the American Public Health Association, unless such statements or opinions have been adopted by vote of the Association.

EDITORIAL COMMITTEE

MAZÝCK P. RAVENEL, M.D., *Editor in Chief*
AUGUSTA E. JAY, *Assistant Editor*

C. C. YOUNG, D.P.H.
CLARENCE L. SCAMMAN, M.D.
ARTHUR P. MILLER, C.E.
EMERY R. HAYHURST, M.D., Ph.D.
HENRY F. VAUGHAN, D.P.H.

ASSOCIATE EDITORS

HENRY F. VAUGHAN, D.P.H., AND IRA V. HISCOCK, Public Health Administration
LOUIS I. DUBLIN, Ph.D., Vital Statistics
ARTHUR P. MILLER, C.E., Public Health Engineering
EMERY R. HAYHURST, M.D., Ph.D., AND LEONARD GREENBURG, M.D., Ph.D., Industrial Hygiene
JOHN F. NORTON, Ph.D., Laboratory
WALTER S. FRISBIE, Food and Nutrition
RICHARD A. BOLT, M.D., Dr.P.H., Child Hygiene
EVART G. ROUTZAHN, Education and Publicity
EVA F. MACDOUGALL, R.N., Public Health Nursing
RAYMOND S. PATTERSON, Ph.D., Bibliography

BOVINE TUBERCULOSIS AND HUMAN HEALTH

IN 1901 at the London Congress on Tuberculosis, Robert Koch astounded the world by declaring that bovine tuberculosis, if transmissible to human beings at all, was of no more importance than hereditary tuberculosis, and could therefore be practically disregarded. Without any knowledge of the position which Koch had taken, which was contrary to that of Villemin in 1865 and Koch in 1882, work had been carried on for approximately 3 years at the laboratory of the State Livestock Sanitary Board of Pennsylvania, University of Pennsylvania. The conclusions arrived at were entirely contrary to those announced by Koch; and at that time the work lacked only the inoculation of bovine animals to complete the proof according to Koch's own dictum. This was done in the fall of 1901, and on April 24, 1902,[1] the final paper from this laboratory was read before the Pathological Society of Philadelphia, proving beyond all question that the bovine bacillus was pathogenic for mankind and produced disease in children. The same laboratory published several reports of skin infection in veterinarians and others, in which the germ was isolated and proved to be bovine.

Following the Congress in London, the English appointed a Royal Commission, and the Germans an Imperial Commission. The first

Interim report of the English Commission was made May 16, 1904, and the final report in 1911. The German Commission reported also in 1904, and both of them proved conclusively that Koch's statement was incorrect. In 1908 Koch shifted his ground, admitted that the bovine organism did produce disease in human beings, but did not cause pulmonary consumption. While this had academic interest, from the standpoint of disease and death, it was the difference between tweedledum and tweddledee. Except for our federal Bureau of Animal Industry, city and state health officers, and the work of a moderate number of private bacteriologists, the question has remained in abeyance from that time until 1932.

The National Tuberculosis Association,[2] founded in 1904, for the "study and prevention of tuberculosis," decided formally in 1906 to disregard the dangers of bovine disease and to devote its attention solely to the human bacillus and the human case as a distributor of the germ. So we went along with apparently the great majority of people in their ignorance enjoying a state of blissful security which did not in fact exist. A number of people thought that the question had been definitely settled by the eradication of tuberculosis from dairy cattle, and the pasteurization of milk, both of which measures had proceeded at a fair rate of speed, but cattle tuberculosis is still one of the great economic problems of our country, as well as a menace to human health, especially in the case of those under 15 years of age.

Writers have indulged in rejoicing over the decline in tuberculosis, which is unquestionably very gratifying, and have attributed this to antituberculosis measures, disregarding entirely the correlated work of the public health agencies which abound. It seems that the paper by Biraud [3] was the first to raise the question concerning the relative importance in tuberculosis prevention of general public health work and distinct antituberculosis measures, who made the following statement: "A close relationship between both (general and tuberculosis death rates) would tend to indicate the importance of environmental factors and the general state of health on tuberculosis mortality, as compared with direct results achieved by specific antituberculosis measures."

This led to a study [3] by the statistician of the National Tuberculosis Association in which comparisons in some 14 countries are made between the general death rate and that from tuberculosis. In 5 of these, there seems to be evidence that the antituberculosis work is of some value beyond the ordinary public health measures. In the others the curves run almost parallel and seem to demonstrate—what all except those directly engaged in tuberculosis work have believed—

that antituberculosis work is simply one branch of public health work, and does not supersede it or dominate it.

The year 1932 has brought to us two reports which have aroused intense interest and are destined, we believe, to arouse tuberculosis workers from their lethargy. In 1930, Dr. Fremantle,[4] a Member of Parliament, requested the Minister of Health to " issue, for the guidance of the public, a review of the main facts, experience, and conclusions on which action should be based." This was done, but more important was an Extraordinary meeting of the Medical and Science Councils of the People's League of Health at which a committee of sixty, made up of medical, veterinary and agricultural experts, was appointed. Two subcommittees of 23 each were selected from this general committee and have just made their reports,[4] which show that at least 40 per cent of the cows in Great Britain are infected with tuberculosis; that 0.2 per cent suffer from tuberculosis of the udder; that approximately 40 per cent slaughtered in public abattoirs show naked-eye lesions, and that 2 to 13 per cent (average 6.7 per cent) of market milk from various parts of the country contain living tubercle bacilli. The reports further show that 6 per cent of all deaths from tuberculosis are due to the bovine type of bacilli, that 2,000 deaths and at least 4,000 fresh cases due to the bovine infection, mostly in children, occur annually. It is pointed out that a number of cases of tuberculosis, especially of the lymphatic glands, are not reported, so that 4,000 new cases may be regarded as almost certainly an underestimate of the facts.

Following closely on this in America, comes the report of the Committee on Prevention and Research of the International Society for Crippled Children [5] showing that 10–15 per cent of cases of bone and joint tuberculosis are of bovine origin; that of children who suffer from tuberculosis, from 0–5 years, 21 per cent, and 5–16 years, 26 per cent are infected by the bovine germ. The knowledge of these facts has not yet spread through the country. Most of those who have received this knowledge have been, to put it mildly, astonished. Translating these figures into deaths and cases, it means that 3,500–4,000 children annually die in this country from bovine tuberculosis, and that at least 8,000 cases occur; yet the National Tuberculosis Association, which enjoys a rich income from the Christmas Seal sales, amounting one year to approximately 5½ million dollars, and altogether something more than 65 million dollars, has done nothing except pass soothing resolutions concerning tuberculin testing, pasteurization, accredited herds, etc.

The public owes a debt of gratitude to our Bureau of Animal

Industry and to state and city officials in their efforts to suppress bovine tuberculosis, but practically nothing to the National Tuberculosis Association, which indeed congratulates itself in its latest publication [2] on the wisdom of its decision adopted in 1906. The situation passes the understanding of the ordinary individual. The suppression of bovine tuberculosis by the Bureau of Animal Industry is largely a commercial affair, though many veterinarians are deeply interested in the danger of bovine tuberculosis to human beings—more so apparently than the members of the National Tuberculosis Association.

It is high time for a change of sentiment. The facts were positively proved 30 years [1] ago, and it is hard to see that there is any excuse for the negligence which has been evident. The original name of that body did not specify any type of the disease, but tuberculosis in general.

Who can calculate the number of lives saved and the amount of crippling (tuberculosis ranks second as a crippling disease) avoided if we had followed the advice of Abraham Jacobi, great man and great physician, and had been as active in our efforts against bovine infection of children as we have been against the human?

The facts have been before us for 30 years. They have been proved and re-proved. Is there any excuse for longer complaisance or inaction?

BIBLIOGRAPHY

1. Ravenel, Mazÿck P. Intercommunicability of Human and Bovine Tuberculosis. *Proc. Pathological Soc. of Philadelphia*, May, 1902.
2. Jacobs, Philip P. *The Control of Tuberculosis in the United States.* National Tuberculosis Assn., 1932. 407 pp.
3. Whitney, Jessamine S., and Wilcox, Lloyd. *Tuberculosis Mortality in Fourteen Countries: A Preliminary Study.* National Tuberculosis Assn., 1926. 38 pp.
4. Tuberculosis of Bovine Origin in Great Britain. *Brit. M. J.*, Apr. 2, 1932, 618–19.
5. International Society for Crippled Children. Rochester, N. Y. *Report of Committee on Prevention and Research.* Apr. 18, 1932.

TEXAS ONLY STATE OUTSIDE DEATH REGISTRATION AREA

FOR the past five years or more the situation relative to the collection of vital statistics in Texas has been under close observation. An enormous amount of work has resulted in the people of the state being fairly aroused to the necessity of proper records of births and deaths. The problems of compensation in connection with the claims of World War veterans have emphasized, as probably nothing else could, the necessity for official records of births and deaths.

Texas has a good registration law, but the state is so large in area and population, that many problems are peculiar to that state

and not found elsewhere. Indexing and filing the enormous number of records is handicapped by insufficient clerical help. A satisfactory organization is restricted by inadequate machinery to function. It is believed that the registration in the state today is fairly complete and probably would meet the 90 per cent requirements of the U. S. Bureau of the Census if the records could be checked. A record that cannot be found is no record.

Texas is a wealthy state and there is no reason why the few thousands of dollars necessary to put the program on an adequate working basis should not be provided. We are confident that funds would be forthcoming if the members of the legislature were made to understand the grave necessity for proper records. The local chambers of commerce, the veterans' organizations, the Parent-Teacher associations, the women's clubs, and the medical societies of the state might well organize to bring sufficient pressure on the legislature to secure this result.

Texas is the only state outside the U. S. Registration Area. Everyone who has to do with public health and the use of these records is looking forward to the day when the term Registration Area may be dropped from our vocabulary and we may refer to the vital records of the United States and not to the records of a restricted area. With the admission of the Lone Star State to the Registration Area, that objective will be accomplished.

Undoubtedly many interesting and intricate problems having to do with the practice of medicine and the practice of public health could be found in this state. Occasionally diseases which are not peculiar to other states are found here, and their extent and menace cannot be adequately understood in the absence of proper records of death.

PAROLE OF LEPERS

IT is a far cry from the old call, " Unclean, unclean," to the leper of the present day, and it is always a joy to note the progress being made in the control of leprosy as well as its cure.

The most recent report [1] from our National Leper Home at Carville, La., states that 19 patients were paroled during the fiscal year ending June 30, 1931. In the neuropsychiatric service, 17 were examined as candidates for parole, in all of whom the arrest of the disease was quite apparent, and in some there was a complete disappearance of formerly intense neurological disturbances. A special note is struck in this report in telling of the improved morale of lepers and suspects. No longer do the inmates regard themselves as out-

casts from society without hope. While there are always a certain number who abscond, a considerable proportion of these have returned voluntarily for treatment, many even paying their own expenses.

The average daily population of the Home was 322, with a maximum at the end of the year of 337, of whom 63 were new admittances. Of 23 deaths, only 4 were attributed directly to leprosy, nephritis leading with 10, and pneumonia next with 4. Certain departments especially have been enlarged in scope. There is now special treatment of the eye, ear, nose and throat, with the belief that not only can relief for existing disorders be given, but extensions of the disease into these fields may be delayed or prevented. That this enlargement meets a demand is evidenced by the fact that 120,000 treatments were given in this department during the year. A consulting specialist who visits the institution weekly made 10,000 examinations, did refractions, and performed 100 operations. Dermatologic, orthopedic, and dental services are also in operation.

The introduction of additional recreational facilities has produced a marked improvement in the mental attitude of the patients. "The keen competition seems to accelerate both physical and mental functions, broadens views, decreases discontent, and tends to abolish that hand-to-mouth mentality which is so conspicuous in chronic illness."

The decrease in leprosy in practically every part of the world where money and authority are available to carry out what is known scientifically is one of the pleasantest stories that preventive medicine has to tell. The unfortunate leper has suffered from an unreasoning terror on the part of the public. It is a great thing to be able to state that the disease can be arrested and even cured.

REFERENCE

1. *Pub. Health Rep.*, Mar. 11, 1932.

ASSOCIATION NEWS

Sixty-first Annual Meeting of the A.P.H.A.
Washington, D. C., October 24–27, 1932
Headquarters, Willard Hotel

Washington Local Committee
Sub-committee Chairmen

General Chairman—W. C. Fowler, M.D.
General Secretary—L. R. Thompson, M.D.
Entertainment Committee—Dr. J. S. Wall.
Finance Committee—William Gerry Morgan, M.D.
Inspection Trips Committee—Walter S. Frisbie.
Registration and Information Committee—C. N. Nichols.
Meeting Rooms Committee—Brigadier-General M. A. DeLaney.
Membership Committee—J. P. Leake, M.D.
Publicity Committee—William DeKleine, M.D.
Ladies' Entertainment Committee—Gertrude Bowling, R.N.
Exhibits Committee—Ralph C. Williams, M.D.

Association of Women in Public Health

THE Association of Women In Public Health will meet at an informal dinner at the Willard Hotel, Monday, October 24, 1932, at 6:30. Women of all sections of the American Public Health Association and their guests are invited to renew mutual acquaintanceships and learn of progress in other sections. Tickets will be $1.50 per plate and should be purchased at the registration desk.

The International Conference of Women at the Century of Progress Exposition will be discussed.

Nominations for the Governing Council

IN accordance with the By-laws of the Association the Nominating Committee reports the following nominations for the Governing Council. The Constitution provides that "upon the petition of twenty-five Fellows, the Nominating Committee shall add the name of any Fellow to this list, providing such petition is received 15 days before the Annual Meeting."

The ten Fellows receiving the highest number of votes on a written ballot cast by the Fellows present and voting at the Annual Meeting in Washington will be elected for the three-year term, 1932–1935.

Earle G. Brown, M.D.,
Secretary, State Board of Health,
Topeka, Kansas.

Herman N. Bundesen, M.D.,
City Health Officer,
Chicago, Illinois.

J. W. M. Bunker, Ph.D.,
Massachusetts Institute of Technology,
Cambridge, Massachusetts.

M. M. Davis, Ph.D.,
Director for Medical Service,
Julius Rosenwald Fund,
Chicago, Illinois.

W. Thurber Fales, M.D.,
Director, Bureau of Vital Statistics,
Montgomery, Alabama.

Wade H. Frost, M.D.,
Johns Hopkins University,
Baltimore, Maryland.

George W. Fuller,
Fuller and McClintock,
New York, New York.

J. C. Geiger, M.D.,
Health Officer,
San Francisco, California.

Willard P. Greene, M.D.,
Div. of Preventable Diseases,
Minnesota State Board of Health,
Minneapolis, Minnesota.

Alice Hamilton, M.D.,
Harvard University,
Cambridge, Massachusetts.

Norman MacL. Harris, M.B.,
Chief, Laboratory of Hygiene,
Ottawa, Canada.

Ira V. Hiscock, Ph.D.,
Yale University,
New Haven, Connecticut.

Sally Lucas Jean,
Health Consultant,
New York, New York.

W. F. King, M.D.,
State Health Officer,
Indianapolis, Indiana.

E. S. MacPhail,
Superintendent, Bureau of Statistics,
Ottawa, Canada.

Bleecker Marquette,
Ex. Sec., Public Health Federation,
Cincinnati, Ohio.

John E. Monger, M.D.,
U. S. Standard Products Co.,
Columbus, Ohio.

W. H. Peters, M.D.,
Health Commissioner,
Cincinnati, Ohio.

J. L. Pomeroy, M.D.,
Health Officer, Los Angeles County,
Los Angeles, California.

Samuel C. Prescott,
Massachusetts Institute of Technology,
Cambridge, Massachusetts.

R. R. Sayers, M.D.,
U. S. Bureau of Mines,
Washington, D. C.

Wilson G. Smillie, M.D.,
Harvard School of Public Health,
Cambridge, Massachusetts.

William F. Snow, M.D.,
Gen. Dir., American Social Hygiene Association,
New York, New York.

Clair E. Turner,
Massachusetts Institute of Technology,
Cambridge, Massachusetts.

George H. Van Buren,
Metropolitan Life Insurance Co.,
New York, New York.

Elsbeth Vaughan, R.N.,
St. Louis, Missouri.

Augustus B. Wadsworth, M.D.,
Laboratory, State Department of Health,
Albany, New York.

Watson F. Walker, D.P.H.,
Commonwealth Fund,
New York, New York.

Estella F. Warner, M.D.,
U. S. P. H. S.,
Washington, D. C.

Abel Wolman,
Chief Sanitary Engineer,
Department of Health,
Baltimore, Maryland.

A. J. CHESLEY, M.D.,
Chairman,
Nominating Committee.

APPLICANTS FOR FELLOWSHIP

HEALTH OFFICERS' SECTION—James N. Baker, M.D., Montgomery, Ala., Joseph Blickensderfer, M.D., New Philadelphia, O., Walter J. Connell, M.D., Dubuque, Ia., William L. Hart, M.D., Omaha, Neb., John L. Lavan, M.D., Toledo, O., Charles B. Maits, M.D., Pittsburgh, Pa., Arthur W. Newitt, M.D., Midland, Mich., Giles S. Porter, M.D., San Francisco, Calif., Lester A. Round, Ph.D., Providence, R. I., James R. Smith, M.D., Erie, Pa., Samuel J. Stewart, M.D., Alhambra, Calif., Jerry E. Vanderpool, M.D., Walla Walla, Wash.

LABORATORY SECTION—James H. Black, M.D., Dallas, Tex.

VITAL STATISTICS SECTION—Jerome Meyers, M.D., New York, N. Y.

PUBLIC HEALTH ENGINEERING SECTION—Lee M. Clarkson, Atlanta, Ga., Henry Duke Peters, B.S. in C.E., Jacksonville, Fla., Louis F. Warrick, B.S. in C.E., Madison, Wis.

INDUSTRIAL HYGIENE SECTION—Frederick B. Flinn, Ph.D., New York, N. Y., Albert S. Gray, M.D., Hartford, Conn., Adelaide R. Smith, M.D., New York, N. Y.

FOOD AND NUTRITION SECTION—Hugh N. Heffernan, B.S., New Orleans, La., Lawrence H. James, Ph.D., Washington, D. C., George C. Supplee, Ph.D., Bainbridge, N. Y.

CHILD HYGIENE SECTION—John E. Burke, M.D., Schenectady, N. Y., Helen A. Cary, M.D., Portland, Ore., Isidore H. Goldberger, M.D., New York, N. Y., Louise Strachan, A.B., New York, N. Y.

PUBLIC HEALTH EDUCATION SECTION—Maurice A. Bigelow, Ph.D., New York, N. Y., Palmer R. Bowdish, M.D., Provo, Utah, Bertrand Brown, A.M., New York, N. Y., Edward F. Brown, New York, N. Y., Kendall Emerson, M.D., New York, N. Y., Florence L. Meredith, M.D., Boston, Mass., George J. Nelbach, LL.B., New York, N. Y., Edith P. Sappington, M.D., San Francisco, Calif.

PUBLIC HEALTH NURSING SECTION—K. Frances Cleave, B.S., Harrisburg, Pa., Edith Granger, R.N., Orange, N. J., I. Malinde Havey, R.N., Washington, D. C.

EPIDEMIOLOGY SECTION—Milford E. Barnes, M.D., Iowa City, Ia., Howard A. Lanpher, M.D., Des Moines, Ia., Joseph Smith, M.D., Providence, R. I.

UNAFFILIATED—Luther M. Boyers, M.D., Berkeley, Calif., Solomon L. Skvirsky, M.D., Holyoke, Mass.

NEW MEMBERS

The following list includes applicants who have been approved for membership in the A.P.H.A. by the Sub-Committee on Eligibility. These new members have requested affiliation with the sections indicated and action by the Section Council will follow.

Health Officers Section

Levi A. Barnett, M.D., Dept. of Health, Greenwood, Miss., Director, County Health work

F. G. Bartel, M.D., County Health Dept., Newton, Kans., County Health Officer

Primitivo V. L. Cohen, D.D.S., Calle "27 de Febroro" No. 74 (Altos) Santo Domingo, West Indies, Sanitary Health Officer

H. O. Collings, M.D., Health Dept., Quincy, Ill., Public Health Officer

George Holden Coombs, M.D., State Dept. of Health, Augusta, Me., Director of Health

E. S. Gillespie, M.D., Health Dept., Peoria, Ill., Commissioner of Health

A. Judson Kemper, M.D., Court and Washington, Clarksburg, W. Va., County Health Officer

William P. Prescott, Health Dept., Claremont, N. H., Health Officer

Ralph W. Sanders, M.D., Health Dept., Alameda, Calif., Health Officer

Laboratory Section

Emil Bogen, M.D., Olive View, Calif., Director of Laboratories

Cassius L. Clay, State Board of Health, New Orleans, La., State Analyst, Charge of Bureau of Food, Drugs and Chemical Laboratory

Roscoe R. Spencer, M.D., National Institute of Health, Washington, D. C., Medical Research Worker

Public Health Engineering Section

John B. Harrington, 24 Washington St., S. Charleston, W. Va., Assistant Sanitary Engineer, State Health Dept.

Joseph G. Hildebrand, 35 E. Wecker Drive, Chicago, Ill., Secretary-Manager, Plumbing and Heating Industries Bureau

Food and Nutrition Section

S. H. Loeb, 452 Humboldt St., Denver, Colo., Food, Drug and Sanitary Commissioner

Robert P. Straka, 216 13th S. W., Washington, D. C., Assistant Bacteriologist, Bureau of Chemistry and Soils, U. S. Dept. of Agriculture

T. Lowell Swenson, 216 13th S. W., Washington, D. C., Associate Bacteriologist, Food Research Division, U. S. Dept. of Agriculture

Child Hygiene Section

Barnett H. Cooper, M.D., 122 W. Main St., Glen Lyon, Pa., Medical Inspector of Schools

Eleanore Cushing-Lippitt, M.D., 325 E. Wisconsin Ave., Milwaukee, Wis., Vocational School Physician, Dept. of Health

Eugene C. Peck, M.D., 138 Huntington St., New London, Conn., Epidemiologist, State Dept. of Health

Dr. H. L. Woodside, Bigler, Pa., School Medical Examiner

Public Health Education Section

Harold M. Frost, M.D., 95 Milk St., Boston, Mass., Medical Director, New England Mutual Life Insurance Company

Catharine P. Hanly, 320 Martin Brown Bldg., Louisville, Ky., Director of Health Education, Central Dairy Council

Eric M. Matsner, M.D., 1016 Fifth Ave., New York, N. Y., Assistant Visiting Gynecologist, City Hospital

Charles W. Robinson, M.D., City and County Health Dept., Atchison, Kans., City Health Officer

Public Health Nursing Section

Ethel M. Barton, Sullivan County Health Dept., Blountville, Tenn., Staff Nurse

Helen E. Bond, R.N., 210 E. Gaston St., Savannah, Ga., Director, Savannah Health Center

Ruth Burrow, R.N., State Health Dept., Nashville, Tenn., Public Health Nurse

Maude E. Hatheway, R.N., 75 Trinity Ave., Lowville, N. Y., School Nurse

Mrs. R. E. McClung, R.N., 809 Pine St., Trinidad, Colo., Red Cross Board Member

Margaret A. Paul, R.N., 43 S. Lansdowne Ave., Lansdowne, Pa., Director, Visiting Nurse Assn.

Ora E. Phillips, R.N., Rutherford County Health Dept., Murfreesboro, Tenn., Public Health Nurse

Unaffiliated

Miguel Cespedes Alvarez, M.D., Steinhart—Avenue Columbia, Marianao, Cuba, Secretary of Sanitation for Cuba

LETTER FROM GREAT BRITAIN

A PLETHORA OF CONVENTIONS?

ALTHOUGH almost annually somebody or other raises a cry that there are far too many congresses, conventions, and conferences, and in the interests of economy something should be done to reduce the number, nothing ever happens. This year, indeed, when it might be believed that the need for economy was particularly obvious, there appear to be just as many, if not more, than usual. Not only so, but the number of delegates appointed, if smaller at all than the average, is very little below.

The congress of the Royal Sanitary Institute which generally attracts from 1,200 to 1,500 persons, will this year register probably at least the lower figure, the number of appointed delegates to date (a month before the meeting) being in the neighborhood of 800. Having regard to the fact that invitations to appoint representatives were only issued about 4 months ago, and much later than usual, this is regarded as a most gratifying response, and as assuring complete success for the meeting.

As usual, the congress will meet in a number of sections and conferences where a variety of subjects of interest and importance will be discussed under the presidency of persons of prominence and distinction. It is a source of great gratification generally, and particularly to those who are privileged to know him, that Professor Winslow of Yale is to deliver what is known as the "lecture to the congress," and has chosen as his subject, "Current Tendencies in American Public Health."

CHILD WELFARE, TUBERCULOSIS, AND LOCAL GOVERNMENT

ROUND about the time of the holding of the congress of the Royal Sanitary Institute at Brighton—a seaside and health resort about an hour's journey by rail from London—there will have been or will be held certain other conferences. The most important of these are those on maternity and child welfare, and tuberculosis. Each is to be held in London under the presidency of the Minister of Health (Sir E. Hilton Young), though it is probable that the active part he will take will be limited to the delivery of an address offering encouragement and indicating the need for having regard to the difficulties of the moment.

A congress already held is that bearing the resounding title of International Congress of Local Authorities, 1932. This, though not largely attended, included representatives of most nations.

The subjects chosen for discussion were not too interesting: "The practical working of local authorities," and "Recruitment and training of local government officials." The fact that each speaker appeared to believe, erroneously, that the way in which he could assist in securing uniformity was by describing at length the system in operation in his own country, in the language which only he and his own nationals understood, while others had to wait for a translation before learning what it was all about, did not add to the interest or the gaiety of the proceedings.

CITY MANAGERS

INCIDENTALLY, certain delegates from the United States endeavored to frighten the English official representatives to death by pronouncing strongly in favor of the city manager system. With the exception of a few cranks and individuals with views upon, but without experience and knowledge of, local government methods in this country, the generality of persons engaged upon it dislike the manager idea intensely.

To allow of the appointment of such an officer, indeed, would involve a complete alteration of the local government system, if not of the entire mentality of the people. Largely it is because the mentality and the outlook of the peoples differ so very markedly, and were shown at this meeting to be as different as their speech and their mode of thought, that the impression was obtained that as a conference it failed to secure any practical result and must always fail.

Doubtless as an outcome of the gathering there may have come an increase in friendliness and in understanding, and the social functions—some of which, arranged by the Government, the Lord Mayor of London, and others, were of an extreme brilliance—must have created and encouraged such feelings. From the practical local government point of view and that of persons who have to work the machine, it is open to doubt if it had any value at all, or if any international congress dealing with matters of really domestic concern ever can have value.

STERILIZATION OF THE MENTALLY UNFIT

SINCE the National Government came into power a certain amount of pressure has been brought to bear upon the Minister of Health to make some pronouncement on the subject of sterilization of the unfit. Under this pressure, and perhaps on account of the fact that it was brought home to him that in certain parts of the United States something was being done in regard to this problem, the Minister eventually gave a promise that he would set up a committee to inquire into and advise him upon the subject.

This promise has now been kept, and announcement made of the personnel of the committee and the terms of reference. These last are: "To examine and report on the information already available regarding the hereditary transmission and other causes of mental disorders and deficiences; to consider the value of sterilization as a preventive measure, having regard to its physical, psychological and social effects, and the experience of legislation in other countries permitting it; and to suggest what further inquiries might usefully be undertaken in this connection."

Among members of the committee mention may be made of L. G. Brock (the chairman), who is chairman of the Board of Control, and as such has a wide knowledge of psychiatry; Dr. Wilfred Trotter, an honorary surgeon to the King, who has done a great deal of work on the surgery of the brain; Dr. Tredgold, a specialist of note in psychological medicine, whose textbook, *Mental Deficiency*, is now in its fifth editions; and Drs. E. W. Adams and R. H. Crowley, the former a medical

officer of the Ministry of Health, and the latter of the Board of Education. Dr. Crowley, who spent some time in the United States some years ago visiting various child guidance clinics, is probably known to many concerned in this movement and in the prevention and treatment of mental defect. That the labors of the committee may be prolonged, and that it may be some time before they find themselves in a position to report, is fairly generally recognized as possible.

HONORS FOR THE HEALTH SERVICE

AT the new year and on the occasion of his birthday, H. M. The King makes a point of conferring upon such of his subjects as have earned it, or appear or are recommended to him as being deserving of it, certain honors which are in his gift and his alone. This may take the form of a title, or an order, or a medal, and one of the better known British pastimes is to examine with care the "New Year's List," and the "Birthday List," when they appear in the press, to discover if perchance an honor has fallen to a friend or a colleague.

By public health officers particularly, close search is made on every occasion, and only very rarely does it happen that the work done by those engaged in the health service of the people goes unrecognized. The last list, a "Birthday List," which was comparatively short, no doubt because of a feeling that there were other and more serious matters to be attended to, contained an honor for the public health service in the form of a "knighthood" conferred upon Lieut.-Colonel F. E. Fremantle, a member of parliament, a former president of the Society of Medical Officers of Health, and a member of the Council of that Society and of the Royal Sanitary Institute. Sir Francis Fremantle, before his election to parliament, was for a number of years a county medical officer of health. An idealist and an enthusiast in public health and preventive medicine, Fremantle is a tremendously hard worker in parliament and out of it. He is greatly liked and admired by all medical officers of health, who are very proud of the success he has achieved, and especially of this honor which everyone agrees he has thoroughly well earned.

CHARLES PORTER, M.D.

London

PUBLIC HEALTH ADMINISTRATION

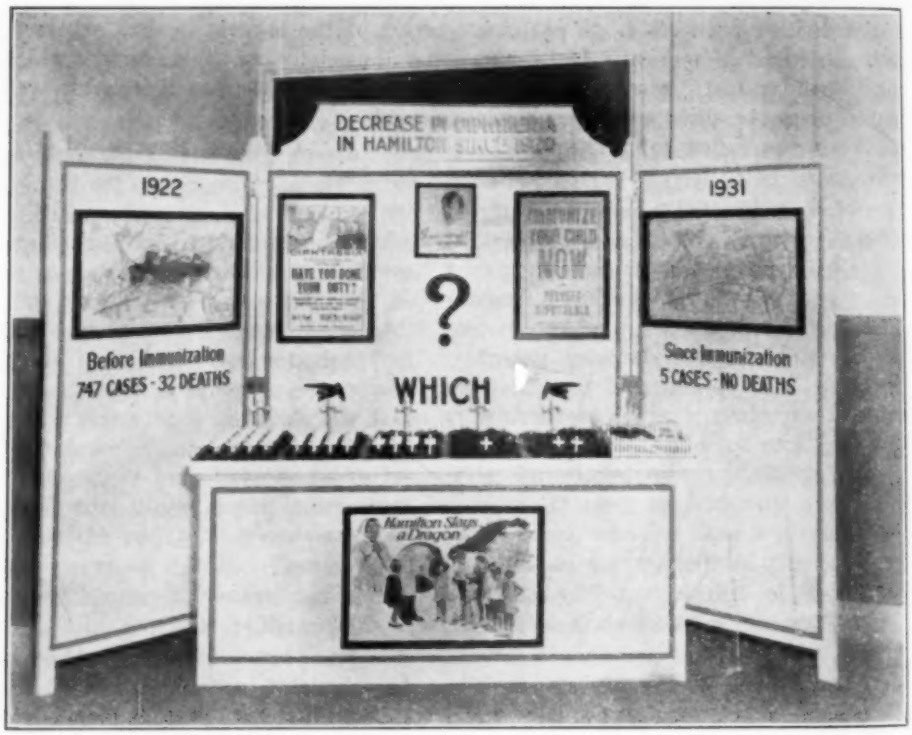
DIPHTHERIA IMMUNIZATION EXHIBIT, HAMILTON, ONTARIO

JAMES ROBERTS, M.D., F.A.P.H.A.
Medical Officer of Health, Hamilton, Ontario

IN spite of the success of our diphtheria immunization work since 1922 it was found essential to awaken, or I might say re-awaken interest in the subject, so that the almost absence of diphtheria in the city would not lull parents into such a sense of security that they would neglect to have their children immunized; and to depict to them in a manner that would leave no doubt in their minds that the work had resulted in a great decrease in cases and deaths.

To do this something had to be evolved that could be easily transported from place to place, that would fit into store windows and similar positions where accommodation was limited, and, above all, that would immediately arrest attention so that the passer-by would stop to look.

The background is made up of three



separate screens manufactured of 1" pine, the panels being of three ply wood. These three sections fit together with brass hinges by means of removable pins. On the left is shown a map of the city in which are placed 747 dark green pins to denote the number of cases, and 32 orange colored pins to show the number of deaths. Over this map "1922" is written. Underneath are the words "Before Immunization"—"747 Cases—32 Deaths." On the center panel are shown three framed posters that have been used in Hamilton at various times to draw attention to diphtheria immunization. Under the small center poster is a large interrogation mark and the word "Which" with a hand pointing to either side. The right hand panel again bears a map of the city showing only 5 green pins, head "1931," and underneath the words—"Since Immunization"—"5 Cases—No Deaths."

In front of this three panel screen is a table with removable legs, surrounded with a panelled screen.

On this table are set up a number of small white crosses, each fitted into a small hole in the table top, which is in turn covered with artificial grass. Each section denoting a particular year is divided by an imitation gravel path. A larger cross with the year written upon it calls attention to the number of deaths in that particular year. Thus, 1920 has 44 crosses; 1922 has 32; 1925 has 14; 1929 has 1, and 1930 has 2.

The end section depicting 1931, in which year we had no deaths, is shown as a vacant field surrounded with a picket fence and adorned with a notice board on which appears "1932"—"Vacant."

On the front of the panel is shown a three colored poster entitled "Hamilton Slays a Dragon." This depicts a line-up of youngsters receiving toxoid treatments while a nurse, in movie parlance, registers joy. In the background is a fearsome looking dragon sneaking away up over the mountain that borders the southern flank of the city.

The whole exhibit is finished in white enamel with light green trim, with all lettering and picture frames in jet black. This color scheme is very effective, especially under artificial light.

To arrest attention further, wax figures of a nurse in uniform and a small girl were posed in front and on either flank of the exhibit, with a small card held in the girl's hand with the caption "Protect Me Too."

The cost was very moderate, and with the greatest good-will and coöperation on the part of store-keepers and others we have effectively demonstrated to the citizens of Hamilton the fact that toxoid has practically banished diphtheria from their midst.

NUMBER OF IMMUNIZATIONS

Year	*School Children*	*Preschool Children*	*Total*
1922–23	1,005	486	1,491
1923–24	3,859	843	4,702
1924–25	2,055	428	2,483
1925–26	2,703	1,302	4,005
1926–27	2,738	1,466	4,204
1927–28	2,931	2,115	5,046
1928–29	1,852	1,788	3,640
1929–30	1,976	2,571	4,547
1930–31	2,011	2,609	4,620
1931–32 (November to March Inclusive)	1,208	1,235	2,443
Totals	22,338	14,843	37,181

NOTE: We are at present engaged in determining the actual percentage of the school population that is immunized, and, while this work is incomplete we anticipate having a figure anywhere between 75 and 85 per cent.

Newport, R. I.—An amendment to the milk regulations provided in 1931 for Grade A pasteurized milk. To qualify for this grade, milk must come from herds tuberculin tested, be effectively refrigerated, have a high butter fat content, be produced under sanitary conditions, and the employees must have medical examinations. There are 6 local pasteurization plants for this city of 25,607. Periodic examinations are made of the ice cream supply in addition to the extensive supervision of milk production and handling.

Cases of communicable disease are cared for at the Newport hospital at a rate of $3.50 per day. During the year, 704 days of treatment were recorded. Thirty-one new cases of pulmonary tuberculosis were reported with 12 deaths. An infant mortality rate of 42.7 is noted.

Manchester, N. H.—An extensive tuberculosis program is reported for this city of 76,834 population, which includes a clinic and nursing program jointly maintained by the city and the New Hampshire Tuberculosis Association.

The attendance at the clinics has been the largest in any year since the program was inaugurated in 1916. Several reasons may be assigned for this record attendance. First, the active work of the nurses in case finding—particularly in the matter of clinic examinations of all contacts in the families of tuberculosis patients; second, the ever growing interest and participation of the public in the program; third, the difficult economic conditions which are causing increased physical breakdowns of many people.

The admissions to sanatoriums have increased, and a slight increase in active cases is noted, although the mortality rate has continued to decline.

Brookline, Mass.—This community of 48,700 records a general mortality rate of 10.5 and an infant mortality rate of 29.3. There were 9 cases of diphtheria, with the first death reported from this disease in 8 years. There are records of 8,275 children who have been given diphtheria immunization treatment. About 81 per cent of the births to residents occurred in hospitals outside of the town. There were 12 deaths of residents from tuberculosis, giving a rate of 24.6. This community received the 1931 award in its population class from the U. S. Chamber of Commerce Health Conservation Contest.

Trenton, N. J.—In 1931 an ordinance was adopted forbidding the sale of any milk or cream in the city except pasteurized or certified. A second ordinance provided for the appointment by the Board of Health of a psychiatric nurse. A mental guidance clinic, established in 1930, is in charge of a psychiatrist, assisted by a psychologist, from the New Jersey State Hospital. The new nurse devotes her time to cases in their homes, especially school children, to histories of patients and families, and to assistance in securing medical and other examinations of cases in clinics.

The work done thus far has been of inestimable value to the community. The individual examinations have been painstaking in the extreme and the recommendations as to future care and treatment of patients have been faithfully carried out, with the result that many families have been relieved of what had become almost heartbreaking burdens and we are sure they feel deeply grateful to the municipality for the service.

San Diego, Calif.—A new significance was given Mother's Day in 1931 according to the annual report of the Health Department. In coöperation with the Maternity Center Association of New York, this city took its place in the national campaign to direct public attention to the high mortality rate from causes associated with pregnancy

and child birth. The program included national and local broadcasts, supplemented by news releases on the health of the expectant mother. Letters to all members of the County Medical Society outlined the program and presented local statistical data regarding causes of maternal deaths. Letters urging local clergymen to discourse on "The Newer Meaning of Mother's Day were received with understanding interest. Many sermons urged upon the public the need to appreciate the importance of proper prenatal supervision. Public health nursing visits were made in an effort to extend prenatal health supervision among the needy.

Floyd **County, Ga.**—This whole-time health unit considers as its major activity the dissemination of information to the citizens of the county on matters pertaining to modern public health work. The newspaper published at the county seat published 40 articles on the work of the Health Department, and otherwise aided in publicity matters. In the treatment of dietary diseases, such as pellagra, the unit provided 475 pounds of yeast for county patients. Sixty-one persons received antirabic treatment during the year. Child hygiene work included an emphasis on school health supervision. A total of 3,325 complete typhoid prevention treatments were given, besides 645 children immunized against diphtheria, and 1,215 vaccinated against smallpox. This annual report concludes with an interesting financial statement showing that at moderate rates, the prevention work done in terms of immunizations, health examinations, etc., may be considered as assets amounting to $44,695 for the year, against costs of $7,644 for the department.

Greenville, S. C.—Among the accomplishments of 1931 were the creation of the office of full-time dairy supervisor for the 70 dairies supplying milk to the city, improvements in the milk supply, strengthened nursing service, medical examination of all food and milk handlers with vaccination against typhoid and smallpox, and increased public health instruction. An infant mortality rate of 48.3 is contrasted with 79.6 for the previous year. There were no cases nor deaths from typhoid, and only 1 death from diphtheria was recorded.—*An. Rep.*, Board of Health, Greenville, S. C., 1931.

Pittsfield, Mass.—In 1931, this city of 50,374 population recorded a resident mortality rate of 9.5 and an infant mortality rate of 50.9. There were only 3 cases of diphtheria, 2 of which were carriers, reported, with no deaths. Two school immunization clinics and a campaign to protect younger children from diphtheria were conducted.

Tuberculosis activities increased during the year by treatment in Westfield of many of the children found by the Chadwick clinic service to have hilum tuberculosis. By the end of the year, however, these children began to return home, most of them vastly improved in health. From the establishment of antituberculosis work in 1919, until 4 years ago, there was a marked decline in the tuberculosis morbidity and mortality. Since then, the decline has been more gradual. On the *Appraisal Form for City Health Work*, the health officer records a rating of 782.

VITAL STATISTICS

Vital Statistics for Indiana, 1931—The Vital Statistics Division of the Indiana State Board of Health has made a tentative report for the calendar year 1931. While the number of deaths from certain causes may be changed slightly as delayed reports are received, the rates will not be changed and are substantially correct.

It is interesting to note that the total death rate for the State of Indiana, 11.9 per 1,000 population, is the lowest general death rate ever recorded in the state. The death rates from tuberculosis (61.1), typhoid fever (2.9), infant diarrhea (13.9), puerperal septicemia (2.6), and from all puerperal causes (9.6) are the lowest ever recorded in the state in any year. The death rate from diphtheria (4.1) is the same as that for 1930. There was a noticeable increase in the death rate from cancer, from 104.6 in 1930 to 106.1 in 1931, and from the total external causes from 108.7 to 112.7. Under this classification, homicides showed a slight decrease with the 1931 rate standing at 6.4 per 100,000 population, while suicide and accidental deaths showed increases. The increase in suicide was from 20.0 to 20.6 while that for accidental causes was from 82.0 in 1930 to 85.7 in 1931. One of the most gratifying returns was a substantial reduction in the death rate from organic heart disease from 190.0 in 1930 to 176.8 in 1931.

The 1931 infant mortality rate of 57.4 is the same as it was in 1930, since the slight reduction in the number of infant deaths, from 3,404 in 1930 to 3,214 in 1931 was balanced by a proportionate decrease in births from 59,280 in 1930 to 55,950 in 1931. The puerperal mortality was higher in 1931 than in 1930, 5.6 and 5.5 (per 1,000 live births) for the 2 years respectively. —Indiana State Board of Health, *Month. Bull.*, 35:2–3 (Jan.), 1932.

Smallpox in the United States and Canada, 1931—Reports from 43 states, the District of Columbia, and 8 Canadian provinces indicate a decided decrease in the prevalence of smallpox in these areas during the year 1931. The case fatality rate, however, showed no appreciable reduction.

The total number of cases in the United States and Canada, declined from 44,977, in 1930, to 26,869, in 1931. In the United States alone, the drop was from 43,694 cases to 26,004, and in Canada, from 1,283 to 865. The case fatality rate, however, was not appreciably reduced except in the urban centers of the United States, where the rate recorded for a group of 626 cities was only 0.17 per 100 cases, as compared with 0.21 in 1930. In 85 Canadian cities, there have been no deaths from smallpox during the past 2 years, and only 1 fatal case was reported in 1929.

Of the 26,004 cases of smallpox reported in 43 states last year, at least 86 per cent or 22,413 cases, occurred in but 19 states, lying chiefly in the north central and western sections of the country. Two states—Kansas and South Dakota—reported more than 1 case per 1,000 of population, and 3 others—Indiana, Iowa and Vermont—just barely missed that ratio. Indiana, alone, recorded more than 3,000 cases; Iowa and Kansas, well over 2,000 each, and Illinois, Ohio, Oklahoma and Texas, very close to that number.

The states just mentioned are, by and

large, those in which there is not general acceptance of the value of vaccination and revaccination as preventive measures against smallpox. To appreciate fully the significance of the figures cited above, it is necessary merely to compare them with those of a group of 15 states in which vaccination is the general practice, namely, the states along the Atlantic Seaboard. The population of these 15 states is approximately that of the first group of 19, that is 48,900,000 against 48,711,000. And yet there were only 1,063 smallpox cases reported in these Atlantic Coast States as against 22,413 in the central and western group. The case incidence rate in these Eastern Seaboard States is only 2 per 100,000, as against 46 per 100,000 in the central and western group. Comparing the 3 Pacific Coast States with those on the Atlantic Seaboard, it is found that there were reported more than 3 times as many cases of smallpox (3,421) in the former area as in the latter (1,063), although the population of the Pacific States is only one-sixth that of the Atlantic States. In fact, there were more smallpox cases (1,112) in the single State of Washington, with a population of but 1,589,000, than occurred among the 48,900,000 inhabitants of the whole Atlantic Coast.

These findings reflect the fuller appreciation and more general acceptance of vaccination as a preventive against smallpox among the population of the Eastern Seaboard. If, for example, the same conditions had existed in the Atlantic Coast area as prevailed to cause the high case rate of 133 per 100,000 in Kansas, there would have occurred over 65,000 cases of smallpox in these states instead of the 1,063 cases actually recorded.

It is hard to realize that in this day, with the knowledge of the ease with which smallpox can be controlled, there are communities like Helena, Ark.; Fort Scott, Kas., and Bennington, Vt., where 1 out of every 100 of the population has been infected with smallpox during a single year. What this means can best be understood by supposing the same case rate that was reported for Fort Scott, Kas., to have prevailed in the City of New York. In that case, there would have occurred in 1931 at least 85,000 cases of smallpox in New York. Actually only 1 case was reported in the Metropolis during that year.—Met. Life Ins. Co. *Stat. Bull.*, 13:4–8 (May), 1932.

Vital Statistics for Italy—Preliminary returns of vital statistics for Italy in 1930 show an increased birth rate and a decreased death rate over the figures for 1929. The birth rate for 1930 was 26.2 per 1,000 population as compared with 25.1 in 1929, 26.2 in 1928, 27.8 in 1925. The death rate from all causes in 1930 was 13.77 per 1,000 population as against 16.14 in 1929 when the mortality exceeded the rates for 1928 (15.76) and 1927 (15.77). The high mortality in 1929 is striking enough to warrant further examination, for it is entirely out of harmony with the gradually decreasing death rate which the greater interest in and attention to public health are effecting in Italy as well as in a great many other countries.

Analysis of the causes of death in 1929 shows that deaths from diseases of the respiratory system were strikingly higher than during the previous year. Influenza, bronchitis (acute and chronic), pleurisy, pneumonia (all forms), and the other diseases of the respiratory system (exclusive of tuberculosis) took a toll of 154,093 lives in 1929 as compared with 124,914 in 1928. This increase in deaths from diseases of the respiratory system of 29,179 is more than large enough to compensate the difference (21,569) in the total number of deaths in 1929 and 1928. Influenza increased from a rate of 24.8 per 100,-

000 in 1928 to 47.3 in 1929; bronchial pneumonia from 143.7 to 169.5; chronic bronchitis from 26.2 to 33.5; and all other diseases of the respiratory system (exclusive of tuberculosis) from approximately 110.2 to approximately 122.5. It is of particular interest to note that despite the increase in deaths from this group of causes, there was a decrease in pulmonary tuberculosis from 92.3 in 1928 to 89.9 in 1929, and from all other forms of tuberculosis, from 33.1 to 31.5. Usually when diseases of the respiratory system are causing high death rates, tuberculosis rates also are high.

Among the diseases which declined in 1929 over 1928, diarrhea and enteritis (under 2 years of age) showed a drop from 165.0 in 1928 to 148.1 in 1929; and suicide declined from 9.5 to 8.8. The 1927 suicide death rate had been 10.4.—Statistical Tables from *Annuario Statistico Italiano Anno.*, IX:31 and 61, 1931.

The Achievements of a Century in Belgium—In commemoration of the one hundredth anniversary of the independence of Belgium, *The Scalpel,* one of the oldest medical journals in existence, has published a special number, in which the most eminent medical authorities of Belgium have summed up the accomplishments of the last century. The authors showed that, while the development of public hygiene in Belgium may appear to have been slow up to the end of the 19th century and to have been confined to the more or less efficient application of administrative or technologic measures, the era of Pasteur opened up paths in which there is evidence of an activity that has brought forth most satisfactory results. The etiology of the various transmissible diseases once established, an adequate crusade was launched against each disease, and excellent results have usually followed.

Such pestilential diseases as cholera, the plague, exanthematic typhus, and smallpox (which in 1870 caused 4,163 deaths in a population of 5,000,000) have completely disappeared from the list of causes of death in Belgium. The country rarely encounters a case of malaria, unless it is one which has been imported from one of the neighboring countries where the disease is still an important health problem. Typhoid fever which formerly made serious inroads on the population and which, as late as 1870 to 1880, caused 4,000 deaths annually, has been reduced to 224 cases in 1927. Diphtheria, which caused more than 4,000 deaths every year up to 1890, and 1,828 in 1900, was responsible for only 254 deaths in 1927. Deaths from scarlet fever dropped from 3,364 in 1870 (5,000,000 population) to 118 in 1927 (8,000,000 population); deaths from measles from 3,320 to 679, and deaths from whooping cough from 3,472 to 863. The mortality from pulmonary tuberculosis, tuberculosis of the bones and of the cerebral meninges, for which a death rate of 350 per 100,000 prevailed in 1870, has been reduced to a rate of less than 90 deaths per 100,000 population in 1927, its death rate having been reduced by three-fourths. Infant mortality, which in 1876 ranged around 167 per 1,000 live births, dropped to 107 in 1922 and to 92 in 1927.

In conclusion it may be stated that, owing to the improvement of the economic, social and particularly the hygienic conditions of Belgium, the number of deaths from all causes in 1927 totalled almost exactly the number reported in 1830 when the population was just about one-half its present number.

The general mortality rate in 1830 was 25.57 per 1,000 population, 23.26 in 1870; 20.85 in 1890; 15.20 in 1910; 13.84 in 1920 and 13.46 in 1927.—*J.A.M.A.*, 98:1490 (Apr. 23), 1932.

Typhoid **Fever in the Large Cities of the United States in 1931**—This report of the typhoid fever mortality in 93 United States cities of more than 100,000 inhabitants, is assembled from reports of deaths from the respective health departments of the cities, and the 1931 rates are based on the population of July 1, 1931, as estimated by the United States Bureau of the Census, except in a few instances in which such estimates were not made; in these cases, the population figures of the year 1930 federal census were employed. No adjustment has been made for resident and nonresident deaths, since such an adjustment would be difficult and would not necessarily result in a statement of true mortality.

Five of the 14 New England cities (Cambridge, Fall River, Lynn, Somerville, Waterbury) had no deaths from typhoid fever during 1931. Boston apparently equals its good record of 1930 with a rate of less than 1 per 100,000. Lowell, which has not had an enviable typhoid picture in recent years, reports a much lower figure for 1931. Springfield, which was the banner city for the period 1926–1930, when the rate was 0.4, did not do as well in 1931, the rate being 2.6 this year, and Hartford shows an average typhoid rate for 1930 and 1931 considerably higher than the average for the preceding 10 years.

The typhoid death rate 1.07 for the New England group as a whole is, with one exception (1928), the lowest ever recorded. These cities have improved their condition relatively with respect to the Middle Atlantic group, the rates this year being almost identical in the two sections.

The cities in the Middle Atlantic states, by far the most populous of the 8 geographic groups, had an average rate in 1931 almost exactly like that in 1930 (1.06 and 1.03 for the 2 years respectively). Reading and Utica had no typhoid deaths in 1931, the latter repeating its perfect record for the second successive year. Paterson on the other hand, which had no typhoid deaths in 1930, records a rate of 2.9 in 1931. Newark, Jersey City, Syracuse, Philadelphia, and Camden had the same rates for 1931 as for 1930, and Erie, New York, and Elizabeth had rates substantially the same for the 2 years. Buffalo shows an encouraging decrease from 3.9 to 0.7. Camden and Elizabeth, with rates of 4.2 and 4.3 for the two cities respectively, again bring up the bottom of the list as they did in 1930. The increase in New York (0.9 to 1.1) small, to be sure, but worth noting, seems to be chiefly due to three outbreaks during the second quarter of 1931 caused by unregistered carriers. The skill and thoroughness with which these outbreaks were traced to food handlers are worthy of emulation. More than half of the typhoid cases occurring in New York City, in which the probable mode of infection could be traced, were apparently contracted outside the city.

Five of the 9 cities in the South Atlantic group (Jacksonville 3.0, Tampa 3.8, Washington 3.9, Norfolk 5.4 and Atlanta 12.6) had higher rates in 1931 than in 1930 and 1 (Miami) was stationary. Norfolk again shows an increase and bids fair to have a higher average for the 1930 quinquennium than for the preceding 10 years. Washington also is not quite maintaining its excellent 1926–1930 average of 2.8.

The cities in the East North Central group led all the others in their low typhoid average for 1931. This is in spite of the fact that in Cleveland 20 out of 31 deaths occurred in an outbreak at the State Hospital for the Insane. Without these deaths, the Cleveland rate, would be 1.2 instead of 3.4. The rates in Milwaukee (0.3), Chicago (0.4), and Cincinnati (0.4) continue amazingly low. South Bend, which was first reported among the cities with a population of over 100,000

in 1930, ends its second consecutive year without a typhoid fever death. Detroit seems definitely to have come out of its typhoid period and ranks among the best. This great group of Middle Western cities with nearly 10,000,000 population appears headed toward an almost complete elimination of typhoid.

The cities in the East South Central states have, as is well known, a more difficult problem than those in some other parts of the country. The great reduction in the Nashville rate for 1931 (from 12.3 in 1930 to 3.2 in 1931) is especially noteworthy. This is by far the lowest rate ever reported in that city. Birmingham also breaks its lowest previous record with a rate of 3.0. Memphis, on the other hand, shows an increase from 4.7 in 1930 to 7.3 in 1931, and Knoxville with a rate of 7.3 is also a backslider.

The cities in the West North Central states made their best group record in 1931, Des Moines and Wichita getting a place on the honor roll, with no typhoid deaths, while Minneapolis, Duluth and St. Paul are not far behind. St. Louis continues its excellent record.

The cities in the West South Central states are, as heretofore, relatively high in typhoid as compared with those in other parts of the country, the average for the group in 1931 being about 7 times as high as the averages for the cities in the New England, Middle Atlantic, East North Central and Mountain and Pacific groups. The increased rate in 1931 appears to be due largely to the increase in the New Orleans rate, from 6.5 in 1930 to 13.9 in 1931. This city, however, is apparently one of those suffering from a high nonresident rate, 48 of the 65 typhoid deaths in 1931 being reported as among nonresidents. Dallas again seems to have more of a typhoid problem than Houston, San Antonio, or Fort Worth. The El Paso rate seems to be coming down satisfactorily.

The cities in the Mountain and Pacific states made a particularly good record for 1931, nearly all of them showing rates as good as or better than those for 1930, thus bringing the group as a whole into close competition with the Eastern states. The typhoid death rate for the Mountain and Pacific cities as a group was 1.07 in 1931. Denver, however, is out of line and had a higher rate (3.4) in 1931 than its 1926–1930 average (2.6).

Twelve of the 93 cities state that no typhoid deaths occurred within their limits in 1931. This is the largest number of cities with perfectly clear records ever reported in these summaries.

The total typhoid rate for the 78 cities whose records are available for the whole 21-year period is almost exactly the same as for the 2 preceding years.

It is too soon to conclude that a stable period in the urban typhoid rate has been reached for the whole country. In the light of past experience, it seems probable that a further decline will be witnessed.—*J.A.M.A.*, 98:1550–1552 (Apr. 30), 1932.

PUBLIC HEALTH ENGINEERING

A RURAL SCHOOL SANITATION PROGRAM*

THE 1930 report of the committee, submitted under the chairmanship of V. M. Ehlers, constitutes a comprehensive study of the activities of various state health departments as regards the field of environmental sanitation. This report was in the nature of a stock taking or survey of the entire field.

The individual sections of the conclusions, together with pertinent portions of the report itself, were brought to the attention of the various committees of the section as a matter of information.

This year, the committee considers it desirable to submit information on a program for rural school sanitation and on suggested standards for it. One of the committee members, W. Scott Johnson, has made this a subject of special study, and has prepared the accompanying brief. It was thought that an outline of a rural school sanitation program already in effect, containing standards and a working plan, would be of maximum interest. One of the most interesting and valuable points brought out in this brief is the importance and value of a rating plan to evaluate the results of the school inspections. This provides the incentive of friendly competition and check-up to insure most thorough work and effort in securing the necessary corrections of any unsatisfactory and unhealthful conditions. Copies of the standard survey report and rating schedule are given with Mr. Johnson's brief. A detailed outline of the standards, giving public health reason for them and information as to satisfactory compliance, is too lengthy to give in this report but is available in mimeographed form.

It is the purpose of the committee, if continued for the coming year, to select another of the subjects recommended in last year's report for the preparation of suggested standards.

GEORGE W. PUTNAM, *Chairman*
A. H. BERRY
W. W. DEBERARD
C. G. GILLESPIE
ANASTASIO GUZMAN
W. S. JOHNSON
A. E. LEGARE
L. B. REYNOLDS
JANE H. RIDER.

* Report of Committee on Promotion of Environmental Sanitation, presented to the Public Health Engineering Section of the American Public Health Association, at the Sixtieth Annual Meeting at Montreal, Canada, September 17, 1931.

RURAL SCHOOL SANITATION PROGRAM IN MISSOURI

W. SCOTT JOHNSON

State Board of Health, Jefferson City, Mo.

OVER a period of years the Division of Public Health Engineering and Sanitation of the State Board of Health of Missouri has developed a program designed to secure better rural school sanitation. Without going into the reasons for this work or the various steps by which the plan reached its present stage, a brief outline of this program as it is working today is sub-

mitted, together with certain results obtained and defects that have become apparent.

The essential features of this rural school sanitation program follow:

1. Annual inspections are required of all rural schools by deputy state health commissioners or their agents in accordance with the regulations of the State Board of Health.

2. Development of regulations and standards of rural school sanitation by the Division of Public Health Engineering and Sanitation; also a survey blank used by the deputy state health commissioners in their annual survey. This is a comprehensive yet concise survey blank requiring only those items to be marked by an (X) which are not satisfactorily complied with and require correction. (See accompanying survey blank.) One copy of this survey report is sent to the school directors, one to the State Board of Health, and one retained by the local health officer. Water containers are furnished by the State Board of Health to the deputy state health commissioners with instructions to collect samples for bacteriological analysis only from properly constructed school wells.

A system of numerically rating school sanitation, using data from the survey sheets submitted by the deputy state health commissioners, was developed by the Engineering Department. This rating can be applied to a single school, all schools in a given county, or to all schools in the state concerning which sanitary surveys have been made out. The ratings furnish an important means of evaluating the results of this work in numerical terms. The attached table indicates the method of rating schools for the entire state.

For example—of the 5,715 schools inspected in the state, 3,899, or 51 per cent, complied with the State Board of Health standards governing drinking water supplies, the possible score for this item being 40 then the "score earned" under drinking water is 51 per cent of 40, or 20.4.

In the last column, the total of the nine scores is shown as the state score for rural school sanitation. Sanitary scores are also computed for the schools surveyed, on a county basis.

Representatives of the Division of Public Health Engineering and Sanitation have a conference on school sanitation at least once each year with the deputy state health commissioners, in order to encourage the making of school inspections and to instruct them in the technic of school inspections. Usually one or two schools are inspected by the health officer in company with the health department representative.

3. The closest coöperation is maintained with the Education Department and county superintendents of schools in all matters pertaining to school sanitation. The State Education Department has adopted the State Board of Health standards for rural school sanitation and, further, will not approve any school for a first class rating until sanitation is approved by the State Board of Health. Inspections of all schools for a first class rating are made by personnel from the Engineering Department.

4. The program is essentially educational in character, and persuasive methods for securing improvements prevail, although in a few cases deputy state health commissioners have, with the backing of the State Board of Health, closed schools until sanitary conditions met requirements. As much publicity as possible is given to the importance of satisfactory school sanitation by articles appearing in the press and the *Missouri Public Health News*, as well as public talks before meetings of teachers, school directors, women's organizations, and the general public.

Each year improvements have been made in this program, and the results

indicate material progress. Last year inspections were made of rural schools in 86 of the 114 counties, indicating an increase of 24 per cent over 1929. Of the 8,000 rural schools, 5,715 were inspected, indicating an increase of 23 per cent in 1930 over 1929. The numerical sanitary rating of rural schools in many counties has shown considerable increase, although the state rating has not shown a corresponding improvement. This is explained by the fact that 21 new counties were added last year in which no previous school sanitation work had been done, and the low rating of these balanced the increases in the other counties.

The success of this work is to a certain degree hampered by the following:

1. No law exists requiring the approval of plans for new school buildings.
2. There is need for better training of deputy state health commissioners in the details of school inspections.
3. Inadequate compensation of deputy state health commissioners by the county courts for school inspection work is a hindrance in several counties.
4. Improved and more complete standards of sanitation for rural schools, including particularly, detailed explanation of the health reason and what constitutes satisfactory compliance.

Certain of these defects will be eliminated in the near future. Under a new state educational law, better supervision of building construction and location will be possible. The deputy state health commissioners are being trained to make more accurate inspections each year by representatives of the State Board of Health. The problem of better compensation for the local health officials is not being solved satisfactorily, except as the number of full-time county health units increase. Improved standards of rural school sanitation are being developed. The first step includes the code on school sanitation giving each regulation followed by the public health

STATE RURAL SCHOOL SANITATION SCORE
STATE BOARD OF HEALTH OF MISSOURI

School Site Possible Score 5		Building Possible Score 5		Water Supply Possible Score 40		Toilets Possible Score 20		Ventilation Possible Score 5	
Per Cent Complying	Score	Per Cent Complying	Score	Per Cent Complying	Score	Per Cent Complying	Score	Per Cent Complying	Score
91	4.6	88	4.4	51	20.4	37	7.4	40	2.0

Heating Possible Score 5		Lighting Possible Score 5		Cleaning Possible Score 5		Personal Hygiene Possible Score 5		
Per Cent Complying	Score	Per Cent Complying	Score	Per Cent Complying	Score	Per Cent Complying	Score	Score for Entire State
54	2.7	52	5.2	95	4.7	66	3.3	54.7

reason for the same and an outline of what constitutes satisfactory compliance. It is proposed to expand this code further and print it with numerous cuts showing satisfactory sanitary equipment, more detailed descrpition of the construction features, and the health reasons for each item of sanitation.

STATE BOARD OF HEALTH OF MISSOURI

SCHOOL SANITATION INSPECTION REPORT

Form S. E. 2

School ..... No. of Pupils Enrolled .....

District No. ..... Name of Clerk ..... Address .....

County ..... Date ..... 193....

BOARD OF DIRECTORS,

Gentlemen:

An inspection of your school was made on the above date, and your attention is respectfully called to the following items marked (X) which do not comply with the State Board of Health regulations on school sanitation. I request that the defects indicated below be corrected in compliance with the enclosed regulations.

Sec.*			
2	Site:	Ample area	( ).
		Clean, well drained	( ).
3	Building:	Solidly constructed; good repair	( ).
4	Drinking Water:	Good location	( ).
		Proper construction	( ).
		Safe analysis	( ).
		Individual cups or fountain	( ).
5	Toilets:	Good location	( ).
		Proper construction	( ).
		Maintenance	( ).
6	Ventilation:	15 sq. ft. floor area per pupil	( ).
		Shields on windows	( ).
7	Heating:	Jacket around stove	( ).
		Thermometer	( ).
8	Lighting:	Light from left or left and rear of pupils	( ).
		Window space 20% of floor area	( ).
9	Cleaning:	Floors clean	( ).
10	Personal Hygiene:	Soap, water, and individual towels provided	( ).

Improvements Since Last Inspected .....

.....

Board Members Present at Time of Survey .....

Remarks: .....

.....

Name of Teacher ..... Address .....

Inspected By .....

* Section numbers correspond to sections in Part IV, Book V, of the State Board of Health regulations.

INDUSTRIAL HYGIENE

Results of **Profit-Sharing Plan of Sears, Roebuck & Company During the Depression**—This company has a profit-sharing plan started by Julius Rosenwald in 1916. Employees, after one year's service with the company, may become members of the fund and are then required to contribute 5 per cent of their earnings up to $300 per month. The company's contribution amounts to 7½ per cent of its earnings before deductions of federal taxes and dividends, and credits to the individual employees' accounts are made on the basis of 1 share to employees with less than 5 years of service, 1½ shares to those with service from 5 to 10 years, and 2 shares to those with 10 or more years of service. In 1931 the company's contribution amounted to $1,000,000, and in only two or three particularly bad years has it been less than 2½ times the deposits of the employees for the year. The funds are invested in the stock of the company purchased at as low a figure as possible.

The plan provides that

> . . . after 10 years' service an employee may withdraw and receive his full share of the fund, including the company contributions. An employee with less than 10 years' service receives only his own deposits with 5 per cent interest, unless he is dismissed through no fault of his own, when he receives the full amount. Women who leave the company to get married receive the full amount to their credit if they have had at least 5 years' service, and in case of death the full amount is paid to the heirs or to the estate of the employee.

When the plan was started Mr. Rosenwald stated that its purpose was to permit employees who remained with the company to accumulate a fund which would be adequate to provide for them upon retirement and also to provide an income for employees with long enough service records who do not remain with the company through their entire business life. The plan also was in part inspired by the desire to secure a stable working force with the lowest possible turnover and to stimulate interest in the success of the company among the employees.

Instances of individual receipts under the plan are cited. Thus a negro porter who was retired a short time ago after 14 years' service drew out $14,000. His maximum salary had been $28 a week and his total contributions to the savings fund amounted to $800. A woman employee who had received a salary well above the average retired recently after a long period of service. She found that her share of the savings fund, invested at 6 per cent, would provide her with an income which was within $10 a month of her former salary. The average totals accumulated under the plan in 10 years are equal to about 15 times the amount actually contributed by the employee, and this ratio increases rapidly as the period of service lengthens. *Month. Labor Rev.*, 34, 5:1066–1067 (May), 1932.

L. G.

The Reactions of the Organism to Repeated Electric Shocks (Author's summary)—Rats were subjected to repeated contacts with electric circuits at 3-day intervals. After contact with a circuit of 248 volts, a certain proportion of the animals showed a paralysis of the hind legs. The incidence of paralysis decreased rapidly with subsequent shocks and disappeared entirely even though the voltage was raised to 1,000 volts. This suggests either that the rats susceptible to the electric current are injured with the first shocks or that they become immune to electricity.

In favor of the latter hypothesis is the fact that the respiratory paralysis and the time required for recovery decreased steadily with increase in the number of shocks. The mechanism of the paralysis is discussed. After a number of shocks

certain rats developed disturbances of equilibrium, priapism, and other signs of hyperirritability of the nervous system.—O. R. Langworthy and W. B. Kouwenhoven, *J. Indust. Hyg.*, XIV, 5:197–205 (May), 1932. L. G.

Relation Between Industrial Home Work and Business Depression—In a recent study made by the Division of Women in Industry of the New York State Department of Labor an attempt was made to determine the amount of home work in licensed tenements. The figures are based on the reports of home work inspectors whose duty it is regularly to inspect tenements licensed for home work.

Contrary to what might be expected the results seem to indicate that in periods of depression home work falls off more sharply than factory work.—*Month. Labor Rev.*, 34, 5:1055–1056 (May), 1932. L. G.

Cadmium Poisoning: II. Experimental Cadmium Poisoning—This contribution is a continuation of one previously reported in the literature on cadmium poisoning. In the present study cadmium oxide and dust was administered to cats by the respiratory and by the gastrointestinal routes.

By inhalation cadmium oxide fumes or dust produces an increase in the respiratory rate and abundant salivation. Edema of the lungs results from high concentrations with death of the test animals. In smaller amounts pneumonia, bronchopneumonia, emphysema, and atelactasis are produced. Cadmium oxide also produces changes in the liver varying from granulation of the cells to a pronounced fatty infiltration. Fatty infiltration of the kidneys was also found.

With cadmium sulphide dust inhalation, symptoms became manifest after 24 to 36 hours. These consisted in vomiting, diarrhea, increased respiration and dyspnea. Pneumonia and the lung damage was similar to that produced by cadmium oxide.

The feeding of large doses of cadmium carbonate or phosphate induces vomiting with salivation and loss of appetite. This is absent when small doses are used. Pathology of the liver and kidneys was noted as a result of these feeding experiments. No definite blood changes were observed in these experiments.

In the inhalation experiments cadmium was found to be stored in the lungs, liver, and kidneys, and later in the bones. In the feeding experiments cadmium was retained by the liver and kidneys but the bones also retained some of the material.

Tests with the Burrell mask and Wilson bag respirator for the protection against cadmium oxide and cadmium chloride revealed efficiencies ranging from 73 to 96 per cent.—Leon Prodan, *J. Indust. Hyg.*, XIV, 5:174–196 (May), 1932. L. G.

On the Effects of Prolonged Exposure to Sulphur Dioxide—This study is based on the examination of 100 controls and 100 workers exposed to sulphur dioxide gas in industrial occupations. Among the exposed group were 47 employees who had a duration of exposure of from 4 to 12 years. The concentrations of gas in the atmosphere varied approximately from 5 to 70 p.p.m. by volume.

The workers were given physical examinations, and X-ray pictures of their chests were made, as well as blood and urine studies. Biometric studies showed that the two groups were, for all practical purposes, highly comparable. Blood studies showed the control group to have approximately 4 per cent higher polymorphonuclear leukocyte counts and 3 per cent lower lymphocyte counts. Pharyngitis, tonsillitis, and abnormal reflexes were somewhat higher in the

exposed group and the exposed group also presented a considerably larger number of cases of acid urine than did the control group.

The symptoms which showed an increase in the exposed group over the control group were shortness of breath on exertion, increased fatigability during employment, and altered sense of taste or smell. The X-ray findings were essentially the same in both groups. Finally, the incidence of colds was not found to be significantly different in the two groups. The duration of colds was somewhat greater in the exposed group than in the unexposed group.—R. A. Kehoe, F. M. Willard, K. Kitzmiller, and T. J. LeBlanc, *J. Indust. Hyg.*, XIV, 5:159–173 (May), 1932. L. G.

The Best Temperature for Light Work—The Variance of Working Capacities Under Different Air Conditions—This paper reports the first of a series of studies of the Holland Air Conditioning Research Program sponsored by the Holland Furnace Company. The program on the physiological effects of air environment was originally planned under three general headings:

> First, in investigation of the effects of various conditions on sleep; second, the effect of various air conditions on the capacity for light work; and third, the effect of various air conditions on the capacity for hard work.
>
> In order to carry out this program an insulated room was constructed, about 10 ft. by 10 ft. in floor area, with a ceiling height of 8 ft. The insulation was applied to the inner walls and painted with water-proof paint and varnish. Direct expansion coils were suspended from the ceiling, air circulation was obtained by means of an oscillating fan. The coils have an approximate cooling capacity of 800 B.t.u. per hour. Electric heaters, a steam jet humidifier, and a Silica Gel dehumidifier were also installed. The tests on subjects doing light and hard work are all conducted in this room.

Artists' models were used as the subjects of these experiments and sorting tests were used as a basis of determining the most suitable atmospheric conditions for light work. The tests consisted in sorting 5 different types of objects from a bowl into suitable boxes, deductions being made for errors in performance. Seven subjects were used in the beginning of this study but later on, owing to the incomplete number of tests, the results of 3 of the subjects' tests were utilized.

From the tests on nude subjects the author concludes:

> A summary analysis of these average composite curves shows that the shortest time intervals elapsed within the following temperature ranges:
>
> | | | | |
> |---|---|---|---|
> | Dry bulb | 83° | to | 90° |
> | Wet bulb | 63° | to | 78° |
> | Effective temperature | 72° | to | 83° |
> | Relative humidity | 45% | to | 48% |
>
> The time interval increases appear to be fairly gradual on the low side of the above mentioned temperature and humidity ranges, while on the upper portion of the scale the temperature curves increase somewhat more sharply and in rather constant increments.

In the tests on clothed subjects the composite curves showed that the shortest average time interval took place under the following average conditions of 75° to 86° dry bulb, 65° to 70° wet bulb, 72° to 77° effective temperature and 58 per cent to 62 per cent relative humidity. On this point the author says:

> In looking over the curves of the individual subjects one cannot escape the conviction that the data are insufficient for more definite conclusions. We cannot as yet say that a certain temperature is the best for light work as the average in the points determined makes the curves somewhat indefinite.
>
> When, however, we examine the composite curves the conclusion appears reasonable that the elapsed time for performing the sorting tests drops rather definitely to a certain low point and then ascends. The curves indicate higher temperatures, either the dry bulb or the effective temperature, than are usually considered desirable for work of this kind.

—E. V. Hill, *The Aerologist*, VIII, 5:5–12 (May), 1932. L. G.

FOOD AND NUTRITION

Action of an Aerobic Spore-Forming Organism on Evaporated Milk—An outbreak of coagulation in evaporated milk was studied by the authors. Many cans of the spoiled milk were examined bacteriologically and, while most of them failed to yield an organism, an aerobic, spore-forming bacillus, later identified as *Bacillus cereus*, was isolated from three cans, all of which came from one batch of milk. This organism curdled cans of evaporated milk slowly at 37° C. with no change in the odor and flavor, unless the incubation period was extended, and could be found microscopically for only a short time after inoculation and then only in small numbers. If inoculated evaporated milk was provided with a satisfactory supply of air by transferring it to test tubes, removing a part of the milk from a can or in some other way, the organism curdled the milk rapidly, produced an objectionable odor and flavor and could be found in large numbers microscopically.

Since the organism was found in only three of the many cans of milk examined, it did not appear to be the primary cause of the outbreak. Additional evidence along this line was provided, (a) by the survival of the organism in inoculated milk at 37° C. for extended periods so that it is improbable that the organism had died in the milk failing to yield it, and (b) by an increase in the soluble and amino nitrogen in evaporated milk that coagulated following inoculation with the organism, while the soluble and amino nitrogen in milk from the outbreak were the same as in normal evaporated milk.

Normal cans of evaporated milk showed changes on extended incubation at 37° C.; these included partial curdling, an increase in color and a change in the odor and flavor. Various lots of evaporated milk behaved differently and pronounced differences between brands were encountered. The results suggest that there are variations in the condition of the milk from the standpoint of its resistance to changes by heat. The outbreak of coagulation supplying the milk studied occurred at a time when the atmospheric temperatures were very high, so that a tendency to an instability to heat would have been much more likely to result in coagulation than at other seasons.

The striking thing in connection with the action of *B. cereus* in cans of evaporated milk was the coagulation with no change in the odor or flavor, unless the incubation period was extended.—B. W. Hammer and R. V. Hussong, *J. Dairy Sci.*, 15:220 (May), 1932.

Vitamin Content of Three Varieties of Spinach—Studies were made with three varieties of spinach—Virginia Savoy, Princess Juliana, and Viroflay—to determine whether any correlation existed between vitamin potency and leaf type or leaf color. The vitamins A and B content of the three varieties of spinach tested were about equal. Results indicated that Princess Juliana probably contained slightly less of vitamin C than the Virginia Savoy and Viroflay. No relationship between leaf type and vitamin A or B content was detected. The variety with heavily savoyed, bluish-green leaves seemed slightly less potent in vitamin C than the other two varieties.—Hilda Black Kifer and Hazel E. Munsell, *J. Agri. Res.*, 44:767 (May 15), 1932.

Ferrous Iodide as a Substitute for Vitamin A in Rats—This is a report of a reinvestigation of a claim made (*Science* 68, 1766, 432, 1928) that small doses of syrup of ferrous iodide can substitute for vitamin A in the cure of xerophthalmia and promotion of growth in rats on vitamin-A deficient diets.

Albino rats from a stock raised for generations on Sherman Diet 13 were placed at 4 weeks of age on Sherman vitamin-A free diet 380 plus irradiated ergosterol (1 mg. per 1,000 gm. of diet). Two series were studied—one in which the syrup of ferrous iodide was given as curative measure after xerophthalmia had developed, and the other in which the iodide solution was given as a preventive measure.

In Series I, 45 rats were given iodide treatment daily, when xerophthalmia appeared—usually at about 9 weeks, when constant weight was reached. Iodide treatment had no effect whatever on the incidence of terminal infections of the glands about the mouth so characteristic of vitamin A deficient rats. In 100 per cent of the animals, both with and without iodide treatment, pus was found at death in one or more of the following loci: submaxillary gland, sublingual gland, thyroid, nasal sinuses, and frequently in the middle ear. Death was hastened by ferrous iodide, by an average of 12 days; although the weight at death was about the same for iodide treated as for untreated rats, the difference being 5 gm. or less. Food consumption was less in the iodide treated rats, the average difference being 25 gm.

In Series II, 18 rats were given daily doses of 3 or 5 drops of dilute syrup of ferrous iodide from the beginning of the experimental period until their death. When so given, the iodide had no effect upon the incidence of terminal infections of the glands about the mouth, nor upon the incidence or course of xerophthalmia, although it did delay the onset of xerophthalmia, and the time of appearance of constant weight and death. It also increased food consumption.

These results confirm previous work in which it was shown that syrup of ferrous iodide was without effect on the xerophthalmia of vitamin A deficient rats, and further show that ferrous iodide cannot substitute for vitamin A in the cure or prevention of terminal infections characteristic of vitamin A deficiency in rats.—Hazel C. Cameron, *Science*, 76:19, 1957 (July 1), 1932.

Vitamin B Complex—Ross and Robertson placed a group of young rats on a vitamin B free diet, and a second group on a similar diet plus 6 per cent dried brewer's yeast. Both groups were infected by mouth with an enteritidis organism. Of 53 rats on the diet deficient in vitamin B, 10, or 19 per cent, survived the infection, whereas of 51 rates given the yeast in addition, 38, or 75 per cent, survived the infection. The authors conclude that the addition of the vitamin B complex to the diet lacking in this factor increased the resistance of the rats against infection.—J. R. Ross and Elizabeth Chant Robertson, *Am. J. Dis. Child.*, 43:547 (Mar.), 1932. Abstract, *J. A. M. A.*, 98:2317 (June 25), 1932.

Growth under Vita Glass—The fact that many experiments with vita glass have been uncontrolled and that there has been difficulty in determining what is a "normal" human being, was responsible for this undertaking with rats in a controlled experiment. Pedigreed albino rats were used—two groups of males and females under ordinary and under vita glass, and two mixed groups under each glass. Healthy animals, 30 to 32 days old, were used and maintained during the experimental period on an adequate diet (Sherman B.

ad libitum). Weighings were made every alternate day, and the experimental period was from the first of March to the end of October. During this period the growth curves of the groups are essentially identical; that is, no difference between those under ordinary glass and those under vita glass.

In discussing the results, the authors raise the question as to whether any growth above normal which may be exhibited by experimental animals under vita glass is of any biological value; in other words, that the normal growth may be optimal growth. Other factors are discussed such as the intensity of ultra-violet radiation and the transmission factor of the glass. In this experiment too the animals are exposed to direct sunlight which is not usually possible with humans in ordinary house construction.

Reference is also made to the meager supply of ultra-violet radiation in winter, the loss in transmission through the glass which must be scrupulously clean, the importance of exposure to direct sunlight, the necessity for removing clothing, and the high cost.

As an additional experiment, 20 rats were divided—10 under vita glass, and 10 under window glass, and exposed to a mercury vapor lamp on alternate days, 4 feet from the burner. Growth curves were the same as in the previous experiment.—Ian N. Sutherland, *J. Hyg.*, 32:211 (Apr.), 1932.

A Study of the Calcium Retention on a Diet Containing American Cheddar Cheese—Two healthy young women, weighing 51.3 and 50.2 kg. were the subject of an experiment to determine the utilization of the calcium of cheese, since milk is rich in calcium and no experiments were previously reported on the availability of calcium in Cheddar cheese. The calcium content of the American Cheddar used in this work was 0.74 per cent. The studies included 18 consecutive days of two 9-day periods each—one on cheese diet and the other on pasteurized milk. During this time the subjects were not exposed to direct sunlight.

The cheese was made from milk subjected to flash pasteurization at 160° F. and the milk used was fresh, pasteurized at 142° to 145° F. In the two subjects the cheese supplied 86 and 85.7 per cent of the total calcium and the milk 87.7 and 87.4 per cent. The average daily calcium intake on cheese diet was 10.2 mg. per kg. and on the milk diet, 9.4 mg. per kg. body weight sufficient for calcium equilibrium as indicated by previous investigators. The daily average balances of the cheese diets were +0.005 gm. and —0.040 gm., and on the milk diets these balances were —0.010 and —0.031 gm.

One subject showed a negligible positive balance on cheese and a negligible negative balance on milk, or almost remained in calcium equilibrium. The other subject showed slight negative balance both on the cheese and the milk diets, indicating no essential difference between the utilization of the calcium in cheese and that of pasteurized milk.—Marguerite G. Mallon, L. Margaret Johnson and Clara R. Darby, *J. Nutrition*, 5:121 (Mar.), 1932.

Failures to Produce Experimental Dental Caries in the White Rat with High Carbohydrate Diet and Bacillus Acidophilus or with Vitamin D Deficiency—Reference is made to the modern scientific studies of dental caries including the parasite theory, the fermentation of carbohydrate materials, influence of Lactobacillus acidophilus and the effect of vitamin C and vitamin D deficiency.

To offset the possible effect of the faulty nutritional condition of the mother during gestation, the experimental animals were the fifth generation of an inbred stock on a liberal diet which

was evidenced by the large size of the animals at weaning time. Thirty-day old animals were given an adequate diet supplemented with Viosterol, fresh green cabbage, and brewer's yeast. The ears of both groups were infected with pure cultures of *B. acidophilus*.

At the end of 9 months the rats were killed and examined for dental caries but none was found. Similar results occurred when cabbage was replaced by lettuce and the starch replaced by sucrose, and in addition to inoculation the teeth and gums were rubbed daily with cultures of *B. acidophilus*.

In a second series on a rachitogenic diet, 4 out of 10 rats received an addition of Viosterol. Three of the 4 rats which survived the 13-months period gave no evidence of rickets or bone or joint deformities. Those on the rachitogenic diet without Viosterol showed marked rickets, bone and joint deformities, but the teeth in all of the series exhibited no caries. In all cases the teeth were removed, carefully cleaned, polished and sectioned, and no microscopical evidence of caries was found.—C. A. Lilly, *J. Nutrition*, 5:175 (Mar.), 1932.

Recent Studies of the Vitamin A and C Content of Dried Apricots and Figs—The vitamin C content of fresh Calimyrna and Kadota figs is about one-half that of fresh peaches or prunes, 20 to 30 gm. daily protecting a standard guinea pig against scurvy. Mission figs show less antiscorbutic effect.

The dried figs (Calimyrna and Mission) retained little of this vitamin whether the figs were sulphured or unsulphured, indicating in this fruit that sulphuring does not protect vitamin C in drying. Calimyrna, Kadota and Mission figs contain more vitamin A than grapes but less than apricots, peaches and prunes. In the dried Missions and Calimyrnas sulphuring protected somewhat the vitamin A, dried Missions losing four-fifths unsulphured as against one-half when sulphured.

Cooking of fresh apricots reduced the vitamin content more than in the case of sulphured dried apricots. There is slightly greater loss of vitamin A in cooking unsulphured fruit than with the sulphured. After 6 months storage, dried sulphured apricots, whether raw or cooked, retained about one-half the vitamin C of the fresh fruit. The stored fruit contained 18 to 29 per cent of vitamin A which was not affected by cooking. Apricots are a rich source of vitamin A even after a loss of 70 to 85 per cent of this accessory.—Agnes Fay Morgan, Anna Field and P. F. Nichols, *Fruit Prod. J.*, June, 1932, p. 304.

Investigations Concerning the Effect of Ultra-Violet Light on the Bacterial Content of Milk and of Water—Experiments were made on the bactericidal action of ultra-violet light on milk and on water using Wamoscher, Hanua, Scheidt, and Vita-Ray-Gesellschaft forms of apparatus. Disinfection of milk by ultra-violet light was unsatisfactory. The rays never destroyed as many bacteria as pasteurization. In clear water the rays destroyed 99 per cent of the bacteria so that with the high bacterial content generally found in practice, disinfection was not satisfactory.—L. Vogeler, Milchwirtschafliche Lit.-Bern., 1930, 41:484; *Wass. u. Abwass.*, 28:100, 1931. From *Summary of Current Literature*, Water Pollution Research, V, 4 (Apr.), 1932.

CHILD HYGIENE

Childhood and the Depression

IT is high time to take stock of what is happening to the childhood of our country in this prolonged period of depression. So many loose and ill-advised statements have been made recently regarding the "high health" of American children, that we should turn to those who are in intimate daily contact with medical and social problems, in order to correct false impressions.

While it is true that the infant mortality rate has continued to decline and that the babies of this country have been, on the whole, well provided for, it by no means indicates that our preschool and school children are in a satisfactory condition. On the contrary, reports coming in from various sections of the country state that malnutrition and undernutrition appear to be on the increase, and that it is only through heroic efforts to feed our school population that the children are barely kept from stepping over the starvation line. But physical deterioration is not the only effect of such a period. Social maladjustments and delinquency are multiplying. The widespread uncertainty and instability of family life seriously affect the children.

The results of depression upon childhood have been set forth clearly in a pamphlet published by the National Education Association.* After discussing the financing of education during this depression, the report takes up the increased responsibilities of auxiliary school services.

Along with the increase in attendance, many public school systems are being called upon to operate or to supervise the operation of special non-educational and relief services. Like the increase in attendance, this tendency is merely a temporarily accelerated part of a movement to assign ever increasing child welfare responsibilities to the schools. Whether such responsibilities are a legitimate school function is not the question at issue. The facts are that such relief functions have frequently been allotted to the schools, and that current economic conditions make this work more difficult and expensive. Perhaps the most important relief function assigned to the schools is the supplying of clothing and one or more meals daily to destitute children.

In a few cities the actual operating expense of these services is assumed by the school system, but in most cases the food and clothing are supplied through the American National Red Cross, the American Friends Society, or through other national or local relief agencies. The cost of administering the relief, however, is often handled in part or whole through the school budget. Other auxiliary school services which are probably carrying an unusually increased load due to the depression include: medical and dental clinics, school nurses' services, vocational guidance, libraries, social case work, and free textbooks and supplies for indigent children.

An important phase of the relief work for which schools are being held responsible is the financial contribution of the teaching profession to local relief funds. On September 18, 1931, the President of the National Education Association issued a message on relief, commending the activities of teachers in relief work and urging "that every member of the profession extend immediate aid to make effective the plans and policies of regularly constituted relief agencies." While even an estimate of the amount contributed by teachers to relief work is impossible, the total is certainly a large one. A few examples will serve to show the general nature of the work done.

In New York City, for example, the school relief fund contributed by the school employees was $452,000 in 1930–1931 and $1,000,000 in 1931–1932. Teachers forwarded to the relief committee 2 or 3 per cent of their salaries. The extent of the school relief program may be glimpsed from the following facts for 1930–1931. Many of these figures will be more than doubled in 1931–1932.

* *Childhood and the Depression*, National Education Association, Washington, D. C.

Free lunches served in a single week	9,800
Pairs of shoes distributed	61,500
Garments distributed	120,000
Cost of milk and crackers, alone	$26,000

The responsibilities of the teachers are suggested by the following statement:

> Teachers and other employees are to detect and investigate need and extend immediate help. Thus the teachers are at once contributors to the huge charity fund, the social workers that discover and inquire into the poor pupils' wants, the direct disbursers of free lunches, shoes, and clothing, and also the bookkeepers and administrators of the funds.

In Newark, N. J., the City Teachers Association organized, at the suggestion of the superintendent, with the approval of the Board of Education, a central relief committee. A fund of $18,851 was raised from school employees by the first appeal. Coöperation with the Social Service Bureau and with other welfare agencies was immediately established. The program of relief was maintained on a 12-month basis through 1931. A few facts concerning the work of the Newark school relief fund follow:

Pairs of shoes bought	3,170
Number of children served milk	2,853
Total number of meals served	53,328
Total number of pupils assisted	8,047

The fund was used entirely for relief, the small administrative overhead being paid for by the public school system.

From Kansas City, Mo., comes the report that teachers increased their giving to the Community Chest 75 per cent over last year. Teachers are coöperating in the relief work of the Junior Red Cross, and school nurses are paying for needed medicine when the family cannot do so. In Detroit, $26,488.81 was contributed last year to the Mayor's Unemployment Relief Fund by the teaching force and the present rate of contribution is $4,000 a month. In Chicago, 11,000 hungry school children were given food by teachers who were themselves financially embarrassed by the failure of the Board of Education to pay them.

The general scope of the program carried on in Philadelphia is suggested by the following report.

> Early in 1930 officials of the public school's medical inspection division discovered that many children were seriously undernourished. Investigation showed that hundreds were coming to school without having had breakfast. A committee of school executives was appointed to consider the situation. While it was felt that serving breakfasts in school was not of itself a function of the school system, the teachers could not instruct children who were suffering from the pangs of hunger. The principals of all schools pledged unanimous coöperation to meet the emergency. Contributions came in without solicitation. Teachers, clubs, school entertainments, interscholastic football games, and individual philanthropists contributed money and food.
>
> Breakfasts were served to the children in 128 school buildings and in 3 special centers. The breakfasts were available daily, including Saturdays, Sundays, and holidays. The serving was supervised by principals and teachers in the schools, and in many cases the actual preparation and serving of the food was done by the same persons. The largest number of children served in a single day was approximately 8,600. The average gross cost of each breakfast was approximately 8 cents.
>
> In order to avoid undue imposition by those not needing or deserving this care, a monthly check-up was made of each individual case. The details of the diet were worked out by the Medical Inspection Division, the Director of Home Economics, and the Director of School Lunches. The breakfasts were planned early enough in the morning so that the children thus fed might rejoin their companions before the actual opening of school, thus reducing the publicity that might attach to these children.

The work of a single school in Fresno, Calif., is thus described by its principal:

> As many children as possible are furnished lunches by the Parent Teacher Association, but many lunches are paid for by the cafeteria manager, teacher, and principal. During 1930–1931, clothing and shoes for over 25 children . . . A large part was paid for personally by interested teachers . . . Teachers this year have over-subscribed their quota to the Community Chest by 25 per cent. Teachers come in intimate daily contact with children who are hungry and not properly clothed, and they are supplying the need as best they can from their own funds. They are not giving unintelligently. Each case is investigated by the school nurse at the request of the teacher. Deserving and eligible cases are referred to the Community Chest or the County Welfare Department. But the available aid is frequently not adequate.

Then the school steps in, supplying things that are needed, through teachers, personal contributions, P. T. A. or Student Body funds—in any event supplying the need.

. . . A careful study of the effect of the current depression on child health and welfare is badly needed. Lacking an exact statement, however, we may rely on the reports of competent social workers and upon studies of child welfare made in previous depressions.

The evidence from the latter source is perhaps best represented by a study of unemployment and child welfare conducted during the industrial depression of 1921–1922.

The study attempted to show, as nearly as possible, a cross-section of conditions in the families of unemployed men in two cities in which wages had been high. Some of the conclusions follow:

1. *Lowered standard of living*—Half of the families from which complete information was secured spent for their maintenance during unemployment only one-half as much as while the father was working. "The children are drinking tea and coffee instead of milk," was a common report. Frugality in food, even to the point of actual privation, a dangerous saving of fuel, economy in clothing and household supplies, reduction of the housing cost through seeking cheaper quarters or crowding the family to secure an income from lodgers are among the results of unemployment.

2. *Employment of the mother*—Almost one-third of the mothers in the families of unemployed men were gainfully employed. Many other mothers were seeking work. Three-fourths of the working mothers were employed away from home. The absence of the mother or her pre-occupation with gainful work at home meant loss of care, protection, and supervision for the children. They went to school with insufficient breakfast, their clothing was not cared for, and they suffered ill-effects mentally and physically.

3. *Employment of children*—In one-fifth of the families studied children's earnings were a source of maintenance during the father's unemployment. Factory and clerical work claimed the larger proportion of these children. Even while fathers and mothers were most desperately seeking employment some children were leaving school and securing work.

4. *Loss of savings and accumulation of debt*—Savings of a large majority of the families studied were swept away during the period of unemployment. Patiently accumulated funds for the advanced education of the children went along with the rest. Homes and other property were lost through inability to meet payments or taxes. Insurance funds were allowed to lapse because no money was available to pay the premiums. Many of the families were heavily in debt and felt that father, mother, and children would all have to work as soon as they could find any kind of a job.

Reports compiled by the National Organization for Public Health Nursing indicate that these years of financial depression and unemployment are taking their toll in undernourishment of children. At a health center in New York City, where the percentage of undernourished children has been carefully diagnosed for 3 years, malnutrition has increased from 18 per cent to 60 per cent since 1928. Public health nurses report that their work is handicapped because parents cannot provide their children with the diet recommended. In Louisville, Ky., one agency reports a decrease of 1,000 in the number of children able to meet the health and weight standards.

The importance of stability and security in a child's life can hardly be overestimated. The Children's Charter recognized: "For every child the right to grow up in a family with an adequate standard of living and the security of a stable income as the surest safeguard against social handicaps." That this right of childhood is denied to the children of many unemployed fathers and mothers is well known. A physician has coined the expression "epidemic demoralization," to describe the sense of despair and uncertainty which descends on those who must live by the charity of others. Children share in the loss of security and feel it fully as keenly as adults. A child who discovers that his father is out of a job, that the rent is due, and that no one knows where to get money for groceries has lost that sense of protection that should surround him at all times. The personality and character of such a child may suffer permanent scars from these experiences. Even if he escapes permanent injury the child needs an unusual amount of skilled and sympathetic treatment at school. Under such conditions the school must become much more than an instructional center. It must be a steadying influence to which the child can confidently turn in time of need.

This rapid review of the forces affecting child welfare during an economic depression suggests a third responsibility of the schools growing out of the depression. The educational forces of the nation face a stirring challenge to render an increasingly effective educational service to childhood. All the evidence emphasizes the conclusion: American children need very good schools now more urgently than ever before.

PUBLIC HEALTH NURSING*

The Nurse in Industry—One of the duties of the nurse in industry is to increase the efficiency of the employees; this is what her employer, who pays her salary, expects of her. Her commonest task is to assist the physician in making his examinations, in giving first aid, and in rendering after-care to injuries which are not serious enough to put the employee off the job. The physician is guide and the nurse is responsible to him for whatever she does under his orders.

The nurse will also be required to render emergency first-aid, and she must know that dressings and the administration of drugs for minor illness are not first aid, which in its simplest terms is "usually the control of hemorrhage, protection against infection other than what has already occurred, and just simple measures as may be indicated to prevent further injury."

The nurse may not have authority to remedy unfavorable sanitary conditions in the industrial plant, but she should use what influence she has with the management if she sees inadequate toilet and washing facilities or their improper condition, improper lighting, ventilation, etc.

In many cases a nurse is employed in an industry which has no safety department. Then it is her duty to assist superintendents and foremen to prevent accidents by attention to safety devices; or if there are none, to try to waken the management to responsibilities in this matter.

The industrial nurse has a fine opportunity to be a real health educator among the employees, who are likely to be little read people, not reached by adult health education through newspapers, magazines, etc. She can encourage them to bring their health problems to the plant physician or to her instead of going to the neighbor, corner druggist, or cult healer.

By careful example and precept she can protect the employee against accident and injury, thus serving both the employer and the employee.

The industrial nurse owes it to her profession to maintain high ethical standards, and this is not so easy when one considers that it is her job to see that the injured employee returns to work as soon as possible for the sake of the employer and yet does not return before he is able for his own sake.

She needs to be a member of her district and state nurses' association to get the advantages of professional unity. She must also keep in close touch and coöperation with the medical profession and public health profession in the community.

The nurse in industry is most useful if she remains within her own province and does not yield to pressure in prescribing or dispensing treatment for headache, indigestion, menstrual disturbances and the like, which are problems for the doctor.

Finally, it should be emphasized that the industrial nurse is, in the larger sense, a public health nurse as much as the school nurse or the health department nurse. She has a more restricted field but a peculiarly fertile field. She may reach the father of a family in which the health department can have contact only with the mother, or perhaps she reaches the mother of a family, where both parents are working, and the health department never sees any member excepting the children. She has a rich opportunity for selling the ideas of immunization against diphtheria and smallpox, for explaining the necessity of correcting physical defects in school children, and for

* Please send printed matter or other material relating to public health nursing to Eva F. MacDougall, 6 State House Annex, Indianapolis, Ind.

explaining and furthering the periodic physical examination for adults. She has a magnificent opportunity to be an educator. It is for her to say whether she will use it or let it slip. If she does not elect to use it, then she need not be surprised if she fails to attain her full usefulness and becomes merely a routine swabber of iodine and swather of bandages.—

W. W. Bauer, M.D., The Nurse in Industry, *T. Nurse & Hosp. Rev.*, June, 1932, pp. 698–699.

How a Public Health Nurse Can Prepare for Her Successor—All too often a departing public health nurse does not leave her office or supplies in such a condition as to enable the nurse who follows her to take up the work with understanding and the least amount of trouble. The American Red Cross Public Health Nursing Service gives the following directions to its nurses for preparing for their successors, which ought to be useful to all public health nurses:

I. A list of where things are in the office should be made. A few of the most important things a new nurse will want to locate as soon as she arrives are:
   1. Programs of work for the current year and for several years previous. (If there have been no written programs, the departing nurse would facilitate the work of the new nurse by listing her routine work and special activities and projects she would have been conducting if she had remained.) A brief statement might be attached of possible lines of growth and development for the services, *i.e.*, new projects.
   2. Annual Reports
   3. Monthly Reports
   4. Reports of Committee Meetings
   5. Special Reports
   6. Location of Red Cross pamphlets, special literature, etc.
   7. Location of desk equipment supplies—pens, pencils, paper, ink, etc.
   8. Names and addresses of important people: Chapter chairman, Chapter secretary, nursing activities committee chairman and members of nursing activities committee, superintendent of schools, town physicians, president of the local medical society, president parent-teacher association, secretary local Red Cross committee, chairman teachers' committee, Red Cross nursing and general field representatives, other nurses working in the community, cleaning woman, etc.
   9. Home Hygiene class rolls and informational material
   10. Inventory of equipment
   11. Check list of Red Cross publications and see that those her successor will need are on file.

II. A description of the filing system used should be prepared if it is not perfectly obvious. To illustrate: If the pupils' records are filed in the school and not in the central office, a new nurse might want to know where to find the pupils' cards.

III. A month's supply of report and record forms, etc., should be on hand.

IV. A month's supply of equipment for the nurse's bag (if this is used) should be on hand. This bag should be freshly equipped if the new nurse is coming immediately.

The most important thing, after all, is to leave directions concerning the set-up of the office so that the new nurse will be able to find things. This implies that a nurse before leaving should go over her files, reports, etc., destroying material which is obsolete, and putting what remains in order. Listing, then, will be an easy matter.

After the above has been accomplished, it would be advisable to clear with the chairman of the nursing activities committee and provide her with a copy of the information which has been prepared.—

How the Departing Nurse Can Prepare for Her Successor, American Red Cross, N. H. 488 (Aug.), 1931.

Mathilde S. Kuhlman—Mathilde S. Kuhlman, R.N., director of the Division of Public Health Nursing, New York State Department of Health, and one of the pioneers in public health nursing in this country, died suddenly in Albany, May 30.

She first served as tuberculosis nurse in Lockport, N. Y., then as Cortland County tuberculosis nurse. In 1918, Dr. Herman M. Biggs called upon her to assist in mobilizing nursing care in the influenza epidemic of that year. Later she was appointed state super-

visor of tuberculosis nursing, and finally in August, 1920, became director of the Division of Public Health Nursing. At this time there were 8 field nurses under her direction in New York State; at the time of her death there were 73.

Miss Kuhlman was a member of the American Nurses' Association and of the National League of Nursing Education. She was a Fellow of the American Public Health Association and a former president of the New York State Organization for Public Health Nursing.—Mathilde S. Kuhlman, *Health News*, New York State Dept. of Health, IX, 23:95 (June 6), 1932.

The Second Grading of Nursing Schools Is in Progress—The results of the second grading of the accredited nursing schools of the United States are coming in and are showing decided improvements over the results of the first grading 3 years ago. Seventy per cent of the 1,458 accredited schools took part in the first grading; 80 per cent of the schools are taking part in the second grading.

A few of the improvements shown in the second grading over the first are:

An increase in number of hours of theory planned for students.

An increase in amount of vacation granted students.

An increase in proportion of students having had four years of high school.

An increase in schools having a full-time instructor and also of those having two or more instructors.

There is a tendency towards doing away with student allowances, but not an equally strong tendency toward using the money saved for the benefit of the nursing schools.—*A. N. A. Bull.*, American Nurses' Assn., July, 1932.

Notice to Nurses—The undersigned Nominating Committee of the Public Health Nursing Section desires the coöperation of all of its members in canvassing the section for officers and council members for 1932. The offices to be filled are: Chairman, Vice-Chairman, Secretary, and two members of the Council. One member is to fill the vacancy made by the death of Miss Kuhlman.

Only Fellows of the Association are eligible to the Council. The Committee will be most grateful for the submission of possible nominees.

Harriet Fulmer, *Chairman*,
4727 Ellis Ave.,
Chicago, Ill.

Elsbeth H. Vaughan,
Midwestern Branch,
American Red Cross,
1709 Washington Ave.,
St. Louis, Mo.

Florence M. Patterson,
Community Health Association,
581 Boylston St.,
Boston, Mass.

Cora M. Templeton,
17 City Hall,
Cleveland, O.

Mary A. Brownell,
140 N. 20th St.,
Portland, Ore.

EDUCATION AND PUBLICITY*

It is worth while to stop for a moment to review critically the work done and the methods employed. Such a critical review has proved necessary and fruitful in every science, for the investigator, submerged in daily routine, easily loses his judgment and is inclined to fall into a rut, uncritically employing highly developed and specialized methods in the treatment of cases which are different.—Franz Alexander.

Or, in the treatment of publicity and education situations which are different—different in the varying types of mind, social conditions, occupations, and what not.

Will not vacation be all the more refreshing and stimulating if a portion of it is devoted to a critical review of "the work done and the methods employed"?

They Will Attend the Institute—Responses came to the first brief mention of the Health Education Institute announced in connection with the A.P.H.A. meeting in October.

Probably the fuller description in last month's *Journal* and the attractive folder will bring a full enrollment. If you failed to receive the folder please write Mrs. Willimina Rayne Walsh, American Public Health Association, 450 7th Ave., New York.

Whatever Others Would Like to See—Samples of any forms of health education or publicity materials of interest to other health workers are wanted for the headquarters of the Public Health Education Section at Washington in October, 1932. Send 2 or 3 copies, if available. Send copies (even if copies have already been sent to New York) to Washington Display, Evart G. Routzahn, 130 East 22d St., New York.

Consultation at Washington—Individual and group consultations will be emphasized at Washington in October. What do you wish to get at Washington? What question do you wish to have answered? What would you like to talk over with several interested people? What have you to tell others? Please write to the secretary of the Public Health Education Section, Raymond S. Patterson, John Hancock Mutual Life Insurance Company, Boston.

Cutting Costs Display—How to get the most from the public health dollar invested in public health education and interpretation of the public health department or association will be the subject of a special display at the Washington headquarters of the Public Health Education Section. *What have you to offer? What would you like to see?*

Exhibit of American Medical Association—The scientific exhibit of the A. M. A. held in New Orleans, May 9–13, 1932, eclipsed in interest, in the opinion of one visitor, the rich program of papers and discussions. All of the exhibits were worthy of study and most of them were attractive eye-catchers. Considering that doctors cherish the reputation of shunning display, the showmanship evidenced was extraordinary.

Demonstration and action were aptly used. How the respirator works was shown with an actual patient in the cabinet. A clicking photo-electric cell

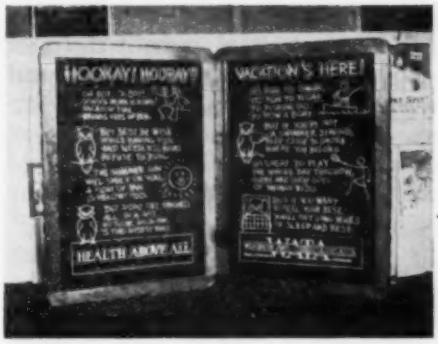
* Please address questions, samples of printed matter, criticism of anything which appears herein, etc., to Evart G. Routzahn, 130 East 22d St., New York, N. Y.

told the story of how ultra-violet rays penetrate or fail to penetrate certain glasses and fabrics, samples of which were at hand. An exhibit of a new fungoid disease of the lungs was "dressed up" with slabs of the maple trees, under the bark of which the offending fungus is found. One exhibit that required detailed study displayed a neat sign inviting the visitor to have a seat facing the display and stating that he would not be bothered by the explainer. The cancer exhibit was made up of a number of units borrowed for the purpose from a number of institutions and research workers.

The physical arrangements were a credit to the Exhibit Committee, being of uniform design, pleasing color scheme, and each bearing a sign stating what the exhibit was about and the name of the exhibitor.—H. E. Kleinschmidt, M.D.

An Exhibit Idea for the Fair—The Wisconsin Tuberculosis Association has attracted much attention through the use of crudely chalked messages on an old fashioned double slate. An especially timely use of it was an illustrated vacation message to put out at the time the schools closed. The text and amusing illustrations are shown in the illustration on this page.

The double slate is suitable for a window exhibit or for a permanent place in an exhibit booth. The dimensions are about 6′ x 8′ and the 4″ wide pine frame is bound with red flannel around which colored yarn has been wound. The blackboard panels are made of wall board painted with ordinary black paint, and the writing is done with ordinary chalk. The two frames are hinged together in the center so that the exhibit folds with the writing on the inside, but since the black panels are not flush with the frame the writing does not rub together.



The slate could be used at the opening of school in September for messages about starting the school year right. The slate idea is adaptable for many uses, for both children and adults.—M. S. R.

What Survey Reports Say About Health Education—Dr. Allen W. Freeman has made "A Survey of Health Organization and Service" of Ontario and Columbia Counties, N. Y. The two published reports have been issued by State Charities Aid Association, 105 E. 22d St., New York.

As to Ontario County:

> Health education in Ontario County is being actively prosecuted by the school authorities and the County Tuberculosis and Health Association. The addition of a program of adult health education and a better coördination of child health education is a necessary part of the future development of public health in the county.

In Columbia County it is said that

> Health education, particularly the education of adults, in the simple truths of hygiene, sanitation and disease prevention, can be attained only by continuous and prolonged effort. But little has been done in this direction up to this time, and the county health department must interest itself largely in the matter. Better coöperation with the school authorities should result also in an improvement in health teaching in the schools.

"Health Education" in the table of contents, Columbia report, refers to health education in the schools.

The opening chapter of each report,

"General Recommendations," from which the quotations came, is the most important of all. Closer reading, and easier use as a check-list of steps to be taken would be gained by the use of sub-headings, and possibly some bold face type to indicate the points made by the author.

What Shall We Tell the Public?—What can be said for the continued maintenance of essential services, public and private? Answers to these questions are being sought by a committee of public health workers under the chairmanship of Dr. H. E. Kleinschmidt. What can be said, and said convincingly, with supporting statistics and other data is being assembled to be made available to health agencies in all parts of the country.

This committee is one section of the Committee on Educational Materials, Mrs. Mary Swain Routzahn, chairman, representing the major groups of welfare activities. Some of the assembled material will be made available to community chests for their fall and winter money raising campaigns. Much of it will be utilized in magazine articles, some of which have been arranged for already.

Health Education in Baltimore—A very concise survey report gives an outline of health education:

> The educational work of nonofficial agencies along the lines of their special interests has been exceedingly valuable. The same may be said of the educational work of certain industrial and insurance companies. The response which Baltimore Division of Chemistry and Food has had in its work with the dairy industry is most encouraging. The plan should be extended to other industries whose products have a direct bearing on health. The possibilities of educational work through civic, social, and professional organizations have scarcely been touched. Mothers attending infant hygiene centers appear to have a good understanding of child care but the response to the school program indicates that more intensive educational work should be done with parents of these children. The venereal disease clinics are not used as educational centers to any great extent.—A Study of Health and Hospital Service of Baltimore, Maryland, by Joseph W. Mountin, Surg., U. S. Public Health Service, June 9, 1932.

Now that the revised edition of *Community Health Organization* is out it will be easily possible for survey reports to offer constructive suggestions and a source of further information on health education.

If We Told All—Just suppose that public health workers generally helped to assemble the data on "what to tell the public." What a wealth of ideas and information could be made available to all who would use the material. A case story, a factual statement, statistical data, an argument, a paragraph from a report, a book, an article—any form of material usable in "telling the public" that public health must be maintained will be welcome. Address the chairman of the Health Section of the Committee on Educational Material, Dr. H. E. Kleinschmidt, or the Section secretary, Thomas C. Edwards, National Health Council—both at 450 7th Ave., New York.

Local Health Education Councils—The sharing of plans and programs, and the discussion of common problems in health education were never more important than at present. Increased effectiveness at even lower costs may be expected to result from conference between local workers.

There could be an independent Health Education Committee or Council wherever 3 or 4 or more local groups are doing something in health education. Where there is a Public Health Council there might be a committee on health education which would bring together, 6 or 8 times a year, representatives of all the local groups concerned. The local Social Work Publicity Council

might well have a health education committee.

Where there is no S.W.P.C., those doing health education could join with the publicity workers in starting such a council for the joint study of many problems in technic, and then hold their separate health education sessions.

A list of topics for health education councils or committees, and plans for a social work publicity council will be supplied upon request to Social Work Publicity Council, 130 E. 22d St., New York.

Whatever the plan followed the arrangement should be simple and be free from organization red tape. A committee of 2 or 3, a mailing list, and a determination to give and get ideas and information are the essentials.

See "Your Libraries May Have the Book," in this issue for one job for such a committee or council.

Your Libraries May Have the Books—Almost any book remotely touching the field of this department contains information or will stimulate ideas for use in the education and publicity work of department or association. The many which are beyond the budget limit of the worker in education will usually be found in the local public or university library, or will be supplied by the state library or library commission.

The more we ask libraries for such books the more likely we will be able to get them. Whenever a book is not in the library, a letter of request or suggestion may be sent to the librarian. Others in health or social work may be enlisted to ask for the same books.

Conservative Modernism in a Report—Attractiveness and readability with dignity characterize the 49th annual report of New York Post-Graduate Medical School and Hospital. The modernism in typography and layout provide distinction without gymnastics in graphic form. Photographs "bleed" over the upper and outer edges of the page, with white space near the opposite edges. Sketches, without captions, illuminate chapter endings *but never appear opposite a photograph.* The running heads at top of pages facilitate location of contents, supplementing an adequate table of contents, which is not labeled "Contents." Two pages about "Living Memorials" emphasize

> . . . a growing belief among thoughtful people that memorials should be vital and emblematic of service rather than mere monuments of granite.

The end-papers express an interesting idea for making graphic the details of out-patient service, but its effect is confused by the banners for the display of the legends. Picture maps need to be extremely simple to be clear and readable.

Most of the distinctive elements in the report are adaptable to other reports, without taking over the two or three details which may seem expensive, such as the heavy cover, and the end-papers. Sample, *20 cents.*

Is This a Fair Check of Your Radio Audience?—K. W. Grimley, Bureau of Health Education and Publicity, Jefferson County Board of Health, Birmingham, writes about "Checking The Radio Audience" in this department Feb., 1932:

> An interesting article, and a ditto idea: but open to the objection of inflicting another questionnaire upon an already murmurous population; a course which I personally do not care to risk.
>
> We have been trying to get a line on our radio audience (we present one talk per week, 10:45 A.M. Tuesdays, over WAPI, locally owned NBC affiliate) by having the announcer, after the talk has been given, conclude with the words: "copy of this lecture will be sent to anyone wishing it. Just write

or telephone your request to the Jefferson County Board of Health, Birmingham."

Over the past 3 months, during which we have presented about 12 lectures, we have received approximately 50 requests. If, as the broadcasting people claim, only a small fraction of 1 per cent ever write in for anything, we are getting a fairly good audience. If not, we're wasting about $15 a week, as that's how much it costs in time to prepare a talk.

Of the total requests "Diabetes" drew 26 per cent; "Care Of The Teeth," and "Cancer" each 15 per cent (about cancer: "We paid good money to advertise this talk in all 3 of our daily papers"); "Diphtheria," not a single request. Mr. Grimley scored his talks as to "the actual composition and diction in comparison with each other." "Diphtheria" and two others were "bad," but several scored as "good" drew but 3 per cent each of the responses.

Was that a good check on the audience? Might the response be different if "additional information" or "answers to questions," had been offered, or "instructions as to what you should do about so and so," or the offer of a pamphlet or folder?

We hope that Birmingham will experiment with various offers and report the results.

RADIO

Some of the possibilities in handling topics are illustrated by the opening paragraphs from broadcasts by the Illinois State Dept. of Health:

Americans take about 3,000,000 gallons of cod liver oil a year. If one figured this out in teaspoon doses it would be like figuring the number of miles the sun is from the earth. Why do we take so much cod liver oil? The leading producer of cod liver oil is Norway, and then come Newfoundland and the United Kingdom. We take most all of the cod liver oil produced by these countries as well as some from Japan. We are the world's leaders in cod liver oil consumption.

The best time to treat a cold is to start at the time you feel chilly, when your nose begins to swell and you start sneezing. Like static in your radio or carbon on the auto cylinders, you are out of adjustment and your involuntary controlling system is upset. Your skin is pale and cold, you feel chilly even in a warm room with an overcoat or fur wraps. The blood vessels in the skin are contracted, your temperature is below normal. The nose and eyes are red, your head feels full and you have a headache.

Man is a porous sack of water. Through his millions of perspiration glands, miles of ducts, lungs and kidneys he loses about 3 quarts of water daily. This must be immediately and continuously replaced and hence he is compelled to live near an inexhaustible supply. Since his very existence depends upon water, it thus carries equal powers of destruction to his welfare and health. Thus it is imperative that man devise means of controlling and preventing this destruction.

From Connecticut Dept. of Health come two radio dialogues, in one a layman and a public health official talk over smallpox vaccination; in the other a mother and a physician discuss the services of the laboratory to physicians. The second one has fewer technical terms. "Is the Can Opener a Cause for Divorce?" a monologue, and "Fat Mothers and Thin Children," a playlet, presented by Elizabeth C. Nickerson with the aid of staff members as Mrs. Jones, Mrs. Black, and other characters. *Free.*

Health News reports:

A radio health talk on goiter, one of the series broadcast weekly by the New York State Department of Health through the courtesy of WGY, was heard over W2XAF, the short-wave experimental station of the General Electric Company, by a merchant in Playa-Ponce, Porto Rico.

The manager of an American copper plant in Chile heard over the same station, the recent talk on "How the State Department of Health Protects Your Milk Supply" and requested further information about the laboratory control of milk pasteurizing plants.

The United States minister to Bolivia, a former classmate of C. A. Holmquist, director, Division of Sanitation, wrote from La Paz that he had listened to the latter's talk on "The Sanitation of Our Surroundings—A Governmental Function" broadcast from station W2XAF on February 24.

"Broadcast to men—women reply," says *Illinois Health Messenger:*

On October 31 the regular weekly broadcast of the Illinois State Department of Public Health, given over WGN at 11:50 A.M., was directed especially to the business man. The title was, Keeping Fit for the Ten to Two Load in Business.

It proved to be particularly popular—but not among men. Eight out of each ten letters asking for copies of the address were from women. Most of them were signed with the prefix "Mrs." however.

The New York City broadcasting in the Early Diagnosis Campaign was a joint project of the New York Tuberculosis and Health Assn. and the New York Academy of Medicine. Ten stations carried 58 talks between March 23 and April 27. Nation-wide hookups carried 6 of the talks, with the addition of associated network stations for 6 others.

CUTTING COSTS

Probably we all know what pamphlets of 24 or more pages (of which 22 pages must carry some form of printing) go as 3d class at book rate of 1 cent for each 2 ounces or fractions thereof (not more than 8 ounces). Covers count as pages.

By filling out the special permit form, printed matter mailed in lots of 200 or more identical pieces (or totalling 20 pounds or more in weight) will cost 12 cents a pound (or not less than 1 cent for each piece). Pamphlets (described above) will be accepted under this bulk permit arrangement at 8 cents a pound or 1 cent minimum. Secure form at Post Office.

By filling out the permit form at the local post office, unsealed circular or form letters (printed, mimeographed or multigraphed) may be mailed in lots of 200 or more identical copies at 12 cents a pound or 1 cent minimum.

Without a permit unsealed circular or form letters, or other mimeographed or multigraphed material may be mailed in lots of 20 or more identical copies at 1½ cents minimum.

The following may be written by hand or typewriter on the circular or form letter: date, name of addressee, name of sender, salutation or ending such as "Dear Sir" or "Sincerely yours."

Under the permit arrangement the mail must be sorted, tied, and marked whenever more than 15 pieces go to a city or state.

In all cases consult your local post office. In case of any confusion or difficulty growing out of the complicated regulations, explain your problem to *Postage and The Mailbag,* 200 5th Ave., New York, enclosing 3 cent postage stamp.

Also address *Postage and The Mailbag* if you wish a summary of postal rates and regulations for 1st and 3d class mail.

A variety of valuable articles on cutting costs and on making better use of the mails is offered in the June-July, 1932, issue of *Postage and The Mailbag.* If the two articles on the use of postal cards results in but a single mailing of cards in place of something more expensive one will save many times the 25 cent cost of that issue of the magazine.

BOOKS AND REPORTS

The Mental Defective—*By Richard J. Berry, M.D., F.R.C.S., F.R.S.E., and R. G. Gordon, M.D., D.S.C., F.R.C.P.E. New York: McGraw-Hill,* 1931. 225 pp. Price, $2.50.

This volume divides itself rather distinctly into two parts. The first part, with the exception of the first chapter, has to do almost entirely with the anatomy and physiology of the central nervous system but especially the brain. Approximately 60 per cent of the book is concerned with the latter.

To the nurse or social worker interested in the practical aspects of caring for the feebleminded, this volume offers little or nothing new. On the other hand, it contains many very interesting statements, e.g., the authors quote a study made of the inmates of an Illinois girls' reformatory where it was found that 97 per cent of these girls were feebleminded. The reviewer wonders if the percentage of feebleminded in any school for the feebleminded is any higher than this. A study is also quoted which shows that two-thirds of the feebleminded fell within the microcephalic group; another study that showed that two-thirds of the feebleminded were below par physically; in a study made in Australia it was found that 80 per cent of 355 criminals studied were microcephalic. Another very interesting statement, which appears on page 179, is as follows:

> No matter what the social standing or status of the individual, an addiction to drugs or a chronic alcoholism is, of itself, very frequently pathognomonic of mental deficiency. Again, it is not usually the drugs and the alcohol which produce the deficiency but the defect that induces the habits.

The above statements, we believe, are wholly inconsistent with the results obtained from similar group studies in this country.

This book has value for the physician who is interested in obtaining a practical understanding of the anatomy and physiology of the nervous system as found in the mental defective. However, the discussions of some factors, e.g., the rôle played by the special senses in the mental life of the mental defective, in view of their practical importance, seem to be unnecessarily lengthy.

The authors of this volume have attempted to treat authoritatively, too much from a neurological point of view, a subject that is primarily, on the practical side, a psychological and social one.

The book is very well written and easily read. It consists of 8 chapters and an index and contains 225 pages. There is no bibliography.

FRANK J. O'BRIEN

Health and Its Maintenance. A Hygiene Text for Women—*By Bertha S. Dyment, M.D. Stanford University, Calif.: Stanford University Press,* 1931. 472 pp. Price, $3.50.

This textbook contains as much anatomy and physiology as is considered essential in the rationalizing of instruction in hygiene. It is designed primarily for those who take a course in hygiene before physiology and anatomy have been studied.

The various systems of the body are presented in separate chapters, each one including its physiology, some of the most common diseases, and the hygiene. One chapter, "Individual Mental Hygiene," is written by Catherine Cox Miles. Another chapter, "The Girl

About to Marry," is by Mrs. Eric Allen. The last three chapters of the book are devoted to embryological development, heredity, and dieting.

The book is written in an interesting style. It is sufficiently concise to permit assimilation of its content by students. If, as the author suggests, the text material is supplemented by the use of slides, models, and demonstrations, it should prove a successful book. It would be an even more valuable text if it had included a chapter on immunity, infection, and modes of transmission of disease.

ESTHER W. STEARN

Sanitary Law in Question and Answer—*By Charles Porter, M.D. and James Fenton, M.D. 3rd ed. London: H. K. Lewis & Co., Ltd.*, 1932. Price 21s.

The fact that this book has gone through three editions is evidence of its value to those for whom it is particularly intended; namely, students in public health sanitary law. As is stated in the preface, the subject presents great difficulty, partly on account of the enormous number of laws, additions, alterations in methods, amendments, etc.

It is hard for an American to review a book of this type, as England is far ahead of us, not only in laws, but in their observance. We can say without hesitation, however, that no man in England is better fitted to deal with this subject than Dr. Charles Porter, who is a barrister-at-law as well as a Medical Officer of Health, and in this edition he is assisted also by Dr. Fenton, Medical Officer of Health of the Royal Borough of Kensington.

The book appears to cover in a clear and concise manner every question that the student can ask. Unfortunately, it is not directly adapted to American readers, except that all of us can learn much from the English, to whom we owe the great sanitary awakening under Chadwick. The book is well printed and made up. MAZŸCK P. RAVENEL

Control of Conception—*By Robert Latou Dikinson and Louise Stevens Bryant. Baltimore: Williams & Wilkins*, 1931. 290 pp. Price, $4.50.

The Practice of Contraception—*An International Symposium and Survey—Edited by Margaret Sanger and Hannah M. Stone. Baltimore: Williams & Wilkins*, 1931. 316 pp. Price $4.00.

For many years the advocates of birth control in this country have endured slurs, insults, and imprisonment, in their bitter struggle for what they hold to be one of the most vital problems affecting the happiness of the home, and the economic welfare of future generations.

There is little doubt that many persons who believe that the subject is worthy of careful consideration would have come out openly for it except that the remedies proposed in the past have not seemed adequate or properly controlled, and that the subject offends several of our important religious bodies. The matter is still in a controversial stage, but it seems much better for it to be in the hands of educated and earnest people than in those of the insincere and the charlatans. For this reason we believe that the review of these books has a place in this JOURNAL, which has up to the present time avoided the subject for the reasons given above.

As a result of these efforts, this problem is receiving widespread attention. It is discussed in the open forum of the current journals and magazines, it is debated in the highest ecclesiastical circles, and receives the thoughtful consideration of legislative bodies.

Whatever opinion one may have held of the necessity or desirability of giving the general public information for the prevention of conception, it is necessary to recognize the fact that this question

can no longer be ignored, and that the claims of its sponsors must be examined fairly and critically.

No adequate presentation of the subject, summarizing the opinions of the leaders in various countries throughout the world, and offering for critical consideration the accepted methods and the results thus far achieved, has been available until recently. It is true that several small publications have been on the market. Some of these are obviously pornographic. Others have been written entirely for the individual directly interested in preventing a possible pregnancy. However, the appearance of the two volumes, *Control of Conception* and *The Practice of Contraception*, has completely satisfied this need. These books are to be recommended without reservation to those who are interested in this important problem, whether for or against its further spread. Here will be found a frank discussion of its sociological aspects, a description of the various methods used to prevent conception, and an analysis of the results obtainable.

The *Control of Contraception* is a book which should be of great value to social workers and to physicians alike. The simple straightforward language required no small amount of courage on the part of the authors. Anatomy and the physiology of fertilization are fully described and well illustrated. The known and commonly used methods for prevention are given in detail and evaluated. Operative measures for sterilization and abortion are adequately described. The last chapters are devoted to the organization and administration of birth control clinics, and a discussion of the present laws of various states and the federal government.

The *Practice of Contraception* is a complete report of the proceedings of the 7th International Birth Control Conference, Zurich, September, 1930. Reports on contraceptive methods employed were made by members for the United States, Germany, Russia, Austria, Holland, Denmark, India, China and Japan. Of particular interest is the report from Russia by Dr. Martha Ruben-Wolf.

One cannot read these books without realizing the social importance of this subject and the earnestness of its advocates. The authors have performed a much needed service and have done it well. D. L. HARRIS

Principles and Practices in Public Health Nursing Including Cost Analysis—*Prepared by The National Organization for Public Health Nursing. New York: Macmillan*, 1932. 129 pp. Price, $1.75.

This book is published just at a time when public health nursing agencies need guidance in showing to a scrutinizing public the relation of cost to quality of service. Therefore it is of double value. "It has been prepared especially for the guidance of executives and board members, that they may compute the cost of a visit and that they may maintain a standard of service consistent with the best public health and medical practice." It is aimed to supplement and to be used in connection with the *Manual for Public Health Nursing and The Board Members' Manual*.

The first part of the book discusses principles and accepted practices which are definitely related to cost. It discusses, among other things, personnel, salaries, health of staff, supervision, educational programs, working hours, visits, transportation and records and reports.

The reports of the Service Evaluation Committee and other special committees, the findings of time and activity studies of public health nursing organizations and reports and recommendations of the various committees of the National Organization for Public

Health Nursing which have been published at times in *Public Health Nursing*, have been drawn upon for the first part of this book. This contains the latest and best known in public health nursing procedure in brief, concise and usable form. The second part of the book deals with detailed directions for computing the cost of a visit.

While the nurse working alone might find the book helpful in computing the cost of a visit, it will not mean as much to her as to the organizations employing more nurses. To them it would be indispensable. It has been compiled with these larger organizations in mind.

The directions for computing the cost of a visit show that more work needs to be done to help those organizations who are giving a generalized service including school nursing. In their services the distinction between what is and what is not related to a nursing visit is so difficult to make that an unfair computation of cost often results.

For the organizations who are anxious to appraise themselves as to quality of service in relation to cost, for those who want to determine upon a fair charge to individuals who are able and want to pay for the service, and especially for those who have contractual agreements with other agencies for service on a cost basis, this book is a necessity.

The book is small, only 129 pages, well bound, easy to read, and well indexed. The appendix contains reports of the N.O.P.H.N. Service Evaluation Committee and the Records Committee —also suggested forms for use in calculating costs. VIRGINIA A. JONES

Oxford Medical Adviser for the Home—*By John D. Comrie, M.D. New York: Oxford University Press,* 1931. 391 pp. Price, $2.25.

This volume has been prepared for use in the home. It purports to give advice of a practical character pertaining to the preservation and restoration of health. Unfortunately for those who are expected to derive benefit from this source, things are included which are not of general interest, and others are not included which would enable the individual to detect early signs of disease. Although written for the laity, there is little justification for generalizations to be at variance with fact, as is so apparent in the sections on cretinism and ptomaine poisoning.

It is a nice question as to whether such books as this have a place. For people living in rural sections at great distances from medical help, they are undoubtedly of service at times. On the other hand, combined with the unscrupulous claims of patent medicine advertisers and the fact that many such medicines are sold at every crossroads store, the advice given is apt to lead many people to too much self-medication. NEWELL R. ZIEGLER.

How to Interview—*By Walter Van Dyke Bingham and Bruce Victor Moore. Harper,* 1931. 320 pp. Price, $4.00.

The book aims to bring together from every field what it can to add to our general knowledge of how to interview, and also the peculiar technics of each field with a view to arriving at that definite plan and systematizing necessary in the interview that will yield results, and it has done so exhaustively and most admirably.

Chapters two and three are of great practical value. Chapter two is devoted to "systematizing the vocational interview." While dealing with the vocational field it is essentially a basic pattern which can be used by all interviewers regardless of their fields. The differences in details and emphasis are shown in the specific technics used in the interview for legal evidence, in journalism, in the mental clinic, in education, in social case work, in industrial

relations, and in employment—all simply and interestingly given.

Chapter three presents excellent, very practical suggestions to those "learning how to interview." The same chapter studied by those long used to interviewing could well serve as a standard for self appraisal.

Part II is concerned with "Researches in the Use of Interviews for Industrial Fact Finding." One experiment is to discover the attitudes of employees toward an employment guarantee plan, another in interviewing textile workers on strike. Both research experiments aimed to show "the proper uses, reliability, and technics of the interview process." They did show that it has its proper uses, the chief of these is "in ascertaining knowledge, not about external physical facts and events but about an interviewer's attitudes and feelings." "This is the area in which the interview as a fact-finding instrument has its greatest value." This is very fortunate because it is concerning such that "records and similar objective sources are least available."

The bibliography on the personal interview, assembled by Dr. Moore, is a comprehensive survey of the literature in English. It alone is worth the price of the book. GRACE ROSS

Diabetes and Its Treatment by Insulin and Diet—*By Orlando H. Petty, M.D. 5th ed. Philadelphia: Davis,* 1931. 224 pp. Price, $2.00.

In the successful handling of patients suffering from diabetes mellitus, a thorough education of the patient is a most important factor. Handbooks for the patients, written in plain and intelligible language, have become not only a desirable, but an almost indispensable part of the management of this disorder, the proper treatment of which should reduce its present inexcusably high mortality.

The 5th edition of this "Handbook for the Patient" should be welcomed, therefore, not only by the diabetic patient, but equally by the physician who treats diabetics. It covers practically every problem of the disease and its treatment. Dr. Petty's writing is clear and concise, and can be easily understood by the layman.

The reviewer agrees with Dr. Petty as to the importance of weighing the diet, especially in severe cases. This method has its shortcomings because of impracticability; nor need it be forced upon the intelligent and coöperative patient with milder diabetes.

A very commendable chapter is that dealing with salt-free diet, the value of which is becoming well established. The Jewish patient, following orthodox dietary laws, will welcome a large number of special diet forms. The importance of close coöperation between internist and surgeon in the handling of surgical diabetic cases, has been sufficiently stressed in the preface by the late Dr. Deaver; the necessity of such team work is becoming more and more recognized. Dr. Petty's handbook serves its purpose very well in every respect. R. SCHARF

Tests and Measurements—*By Irene Palmer. New York: Barnes,* 1932. 143 pp. Price, $2.00.

This small volume is designed for the use of teachers and students of health and physical education. It is an attempt to interest these individuals in the possibilities of measurement and to give them a basis for evaluation and interpretation of tests.

Eight chapters are devoted to a consideration of very elementary statistics. While this information is useful to some individuals, and is of some interest, anyone who might attempt to draw conclusions with no further knowledge of statistics than this, is likely to fall into error in many instances. This and other parts of the

book are distinctly marred by the reproduction of longhand tables and calculations.

There are three chapters pertaining to public health, one of which includes Dr. Thomas D. Wood's Personal Health Standard and Scale. Other chapters are concerned with tests of motor ability, achievement, and knowledge.

The make-up and quality of paper used in the book is good.

NEWELL R. ZIEGLER

Principles of Health Education—*By Clair E. Turner, Dr.P.H. Boston: Heath,* 1932. 317 pp. Price, $2.00.

Health education in schools is one of the more recent aspects of the modern public health movement which promises much for the educator, for the health worker, and for the public. But in the words of the superintendent of the Malden, Mass., schools, who prepared the foreword to this volume:

> The proper correlation of the numerous and varied health activities now existing in educational systems is a perplexing problem to everyone interested in, or responsible for, the organization and direction of school curricula.

Furthermore, until recently, a satisfactory definition of what is embodied in health education, and the methods of practical health instruction in schools, have been wanting.

Here is a manual for various groups engaged in health education work in schools which has been carefully prepared by an author eminently qualified for such a task. Years of experimenting in this field and in teaching the subject to classroom groups of school administrators, graduate students, teachers, and nurses have paved the way for the crystallization of a wide experience.

The book consists of 15 chapters dealing with the development of the school health program, the definition of and reasons for health education in schools, including underlying principles in health education, curriculum construction, routine procedures, gradation of material, source material, health education in junior and senior high school, the training of teachers and supervisors, and school health administration.

The reliability and use of growth measurements are also discussed. Principles and procedures are set forth which have been found practical and useful, with special reference to the Malden schools. The book is timely, interestingly written, and well printed.

IRA V. HISCOCK

Rural School Nursing—*The American Red Cross, Washington, D. C.* 152 pp. Price, $.50.

The third revised edition of *Rural School Nursing* is, as formerly, designed for the nurse working alone in a community, usually in a large county where school nursing is only one phase of the public health nursing program, where there is no medical inspector and where there are several thousand pupils to one nurse.

Emphasis is placed on the joint and separate responsibilities of the teacher and the school nurse for the health of the rural child.

This little book was greatly needed among rural school nurses to bring them up to date on some of their practices. It makes a fine supplement for Mary Ella Chayer's *School Nursing,* recently published, which gives the underlying philosophy of all school nursing.

EVA F. MACDOUGALL

Medical Administration of Teaching Hospitals—*By Emmet B. Bay, M.D. Chicago: University of Chicago Press,* 1931. 136 pp. Price, $2.00.

This book concerns itself with the medical aspects of administration in teaching hospitals, and presents the findings of a comparative study of 19 important teaching institutions in this field.

The foreword, by Michael M. Davis,

not only emphasizes the great need for adequate organization because of the complexity of modern medicine, but stresses the effect of over-specialization upon general efficiency in the field of medicine. Davis emphasizes the outstanding value of Bay's analysis in furnishing the impetus for the promotion of other comparative studies of important hospital functions. Attention is focused, too, upon the period of evolution and experimentation through which medical schools and affiliated hospitals are now passing.

The following are some of the more specific problems presented and discussed: (1) Admission of patients, (2) Keeping of medical records, (3) Relation of the Outpatient Department to the hospital, (4) Administrative duties of the Chief of the Medical Service and of the Resident Physician.

Bay lists a series of very necessary functions and endeavors to show the methods employed in the performance of the same in the 19 institutions studied. Interesting deductions are presented to the reader who cannot but become acutely aware of the many problems confronting medical administration.

In addition to a brief descriptive summary of the 19 institutions included in the study, the author also presents a chart used for the analysis of administrative functions and outlines particularly the problems existing today and what appears to be the probable solution of them.

The data assembled furnish a well defined set of findings and set up a technic for the study of medical administration for teaching hospitals. Very effective methods for the administration of this type of hospital are presented and the book, as a whole, proves very interesting and readable.

CHARLES F. WILINSKY

BOOKS RECEIVED

ACCIDENTS, NEUROSES AND COMPENSATION. By James H. Huddleson and J. Ramsay Hunt. Baltimore: Williams & Wilkins, 1932. 256 pp. Price, $4.00.

THE CHEMISTRY OF TUBERCULOSIS. 2d ed. By H. Gideon Wells and Esmond R. Long. Baltimore: Williams & Wilkins, 1932. 481 pp. Price, $7.00.

HYGIENE. A Textbook for College Students. 2d ed. By Florence L. Meredith. Philadelphia: Blakiston, 1932. 802 pp. Price, $3.50.

THE SOCIAL AND ETHICAL SIGNIFICANCE OF NURSING. By Annie W. Goodrich. New York: Macmillan. 401 pp. Price, $3.00.

THE SCIENCES OF MAN IN THE MAKING. An Orientation Book. By Edwin A. Kirkpatrick. New York: Harcourt Brace, 1932. 396 pp. Price, $4.00.

HYGIENE OF COMMUNITY, SCHOOL, AND HOME. By Ernest W. Steel and Ella G. White. New York: Harper, 1932. 368 pp. Price, $2.25.

FUNDAMENTALS IN MASSAGE. By Kathryn L. Jensen. New York: Macmillan, 1932. 167 pp. Price, $2.00.

Towards National Health, or Health and Hygiene in England from Roman to Victorian Times. By J. Anthony Delmege. New York: Macmillan, 1932. 234 pp. Price, $6.00.

Medicine and the State. The Relation Between the Private and Official Practice of Medicine with special reference to Public Health. By Sir Arthur Newsholme. Baltimore: Williams & Wilkins, 1932. 300 pp. Price, $3.50.

Proceedings of the Ninth Annual Short School Texas Public Health Association. November 9–14, 1931. Austin: Texas Public Health Association, 1932. 84 pp. Price, $.50.

LEAGUE OF NATIONS. QUARTERLY BULLETIN OF THE HEALTH ORGANIZATION. Vol. I, No. 1. Boston: World Peace Foundation, 1932. Price, $.50. Yearly subscription $2.00.

THE CRITICISM AND IMPROVEMENT OF DIETS. Ministry of Health: Advisory Committee on Nutrition. 1932. 14 pp. Price, $.10.

Health and Home Nursing. By George Margaretta Douglas. New York: Putnam, 1932. 383 pp. Price, $2.50.

HOUSE DESIGN, CONSTRUCTION AND EQUIPMENT. The President's Conference on Home Building and Home Ownership. Washington, D. C., 1932. 325 pp. Price, $1.15.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

Milk Supply Supervision—This discussion of modern milk sampling practice indicates how vastly more complicated are the milk supply control problems of the great urban centers than are those of the typical small city.

BREW, J. D. Locating the Causes of High Bacteria Counts in Milk. Municipal Sanitation. 3, 6:238 (June), 1932.

Another Venereal Disease Survey—New Orleans was found, in the survey reported upon, to have a venereal disease incidence lower than that of other cities. But as the proportion of cases treated illegally by others than physicians was found unusually high, the showing will not be viewed with undue pride by the sanitary authorities of the city.

CLARK, T. and USILTON, L. J. Prevalence of Venereal Disease in New Orleans, La. Pub. Health Rep. 47, 22:1187 (May), 1932.

Scarlet Fever Isolation—The clinical aphorism that a disease with many remedies has none, applies aptly in criticism of present-day control measures for scarlet fever, say these authors who have summarized the seemingly hopeless variety of isolation and quarantine requirements. A logical basis for reasonable regulations is discussed.

DARLING, G. B. and GORDON, J. E. American Administrative Practice in the Control of Scarlet Fever. J. Prev. Med. 5, 3:185 (May), 1932.

Private Practice and Health—The editor of the J. A. M. A. tells whither the private practice of medicine is drifting. Everyone should read this paper not only for what is said but the way in which it is written. Would that other writers in the field of public health could take a leaf from this effort.

FISHBEIN, M. Present-Day Trends of Private Practice in the United States. J. A. M. A. 93, 24:2039 (June 11), 1932.

Cancer Cures—So little evidence of cancer cures is ever published that this summary of the experience in the Massachusetts Cancer Clinics is welcome. Such evidence is needed to combat the prevailing attitude toward cancer. As the author says: "When a patient dies of cancer every one knows it; when a patient is cured of cancer few know it and none like to admit it."

GRAVES, W. P. Summary of Cured Cancer Clinics. New Eng. J. Med. 206, 25:1302 (June 23), 1932.

Cod Liver Oil and Milk—A small group of underweight employed young women were given cod liver oil and milk in addition to their home diets. They gained an average of 2.6 pounds, were absent 195 hours less than during a previous period, and improved their efficiency.

HOLMES, A. D. *et al.* Results of Supplementing the Dietary of Substandard Workers With Cod Liver Oil and Milk. J. Indust. Hyg. 14, 6:207 (June), 1932.

Human Intestinal Parasites—A state-wide survey in which the feces of 32,000 persons were examined revealed that hookworm infestation had been so reduced in incidence that only in restricted localities in Tennessee was it a menace, but that other intestinal parasites had not been affected. The sanitary and hygienic problems involved are discussed.

KELLER, A. E. *et al.* A State-Wide Study of the Human Intestinal Helminths in Tennessee. J. Prev. Med. 5, 3:161 (May), 1932.

All About Vitamin A—The story of the research leading to the detection

of vitamin A, the characteristics and pathology of avitaminosis, the assaying and chemistry of the vitamin and its functions, are all included in an excellent summary of this broad subject. The paper is the first of a series on vitamins, all of which should be of great interest to health workers.

MENDEL, L. B. Vitamin A. J. A. M. A. 98, 23:1981 (June 4), 1932.

Abortive Poliomyelitis—Epidemiologic study of poliomyelitis outbreaks indicates that, accompanying frank cases, there occur many cases of illnesses not unlike incipient poliomyelitis. These minor illnesses occur among contacts more frequently than is commonly supposed, the ratio to orthodox cases being 6 to 1.

PAUL, J. R. *et al.* "Abortive" Poliomyelitis. J. A. M. A. 98, 26:2262 (June 25), 1932.

Educational Opportunities in Dental Clinics—Small units with affiliated nutritional and educational workers produce very practical returns in health, if the experience in New York City is typical. A valuable contribution.

SINKS, A. E. Dental Clinics and Education. Child H. Bull. 8, 3:81 (May), 1932.

Health Education Abroad—Thus concludes a most stimulating discussion on health education problems: "Propaganda is now a legitimate department of preventive medicine. It tries to meet the profound and sometimes pathetic anxiety for a knowledge of health, and by its inadequacy it produces a sad state of enthusiasm." Could a happier phrase than "sad enthusiasm" be chosen to describe the plight of the usual victim of our efforts to educate?

WILLIAMS, J. H. H. Creative Health Propaganda. J. State Med. 45, 9:271 (June), 1932.

A Story of Smallpox—An illuminating history of smallpox and vaccination in Massachusetts providing valuable statistical references and entertaining excerpts from early writings on the subject. Altogether a most useful source of material for the vaccination propagandist.

WOODWARD, S. B. The Story of Smallpox in Massachusetts. New Eng. J. Med. 206, 23:1181 (June 9), 1932.

NEWS FROM THE FIELD

U.S.P.H.S. NEW BUILDING

ON May 7 the cornerstone of the new office building for the U. S. Public Health Service in Washington, D. C., was laid by the Secretary of the Treasury. The ceremony was attended by the Assistant Secretary having supervision of the Public Health Service, Surgeon General H. S. Cumming, and a group of other persons interested in the Service.

ISOLATING DISTEMPER GERM

IN an effort to isolate the distemper germ and to find a serum, experiments are now being carried on in the Welcome Research Laboratories in London. Fifty silver foxes have been shipped to London for experimental purposes by the Canadian National Express, the animals having been selected from the ranches in the vicinity of Moncton, New Brunswick.

INDIANA CHILD HEALTH INSTITUTE

THE annual Child Health Institute, arranged by the Indiana State Board of Health, was held at the Winona Lake Chautauqua, July 4–9. It was devoted to home protection and to the conservation of the child by the home in coöperation with the community and organized lay groups and professional and official agencies. The specific topics emphasized were: Safety, Sports, Better Homes, Nutrition, The Handicapped Child, Medical Service, Probation Problems.

PARENT-TEACHER PLANS

PLANS of work and policies for the more than 20,000 parent-teacher associations, units of the National Congress of Parents and Teachers, will be considered at the meeting of the Parent-Teacher Board of Managers to be held from September 26 to October 1 at the Edgewater Beach Hotel, Chicago.

WILLIAM WOOD AND WILLIAMS & WILKINS MERGE

THE Williams and Wilkins Company, of Baltimore, on June 16, purchased inventory assets and good will of William Wood and Company, well known as one of the oldest American publishers of medical text books and importers of English medical books, established in 1804 by Samuel Wood. The firm name will be perpetuated, and business will continue for the time being at 156 Fifth Avenue, New York. The Williams and Wilkins Company has always specialized in various research publications, including medical works.

PERSONALS

DR. GREENE L. REA, member A.P.H.A., has been appointed acting Health Officer of Charlotte, N. C., succeeding Dr. Wilbur A. McPhaul, member A.P.H.A., who recently resigned to become Health Officer of Pensacola, Fla.

DR. JOHN R. TARRANT has been appointed Health Officer of Portland, Conn., succeeding Dr. Donald J. MacGillivray.

DR. THEODORE F. FOSTER has been appointed Health Officer of West Hartford, Conn.

DR. JAMES J. CHARRON has been appointed Health Officer of Putnam, Conn.

DR. WILLIAM J. FRENCH, of New York, has been appointed full-time Health

Officer of Howard County, with headquarters at Ellicott City, Md., and Dr. Robert H. Johnson, of Brookhaven, Miss., is the New Health Officer of Somerset County, with headquarters at Princess Bay, Md. Dr. French, member A.P.H.A., was Director of the Child Welfare Commission of Delaware and the Fargo Child Health Demonstration of the Commonwealth Fund. Dr. Johnson has been director of the Lincoln County Department of Health cooperating with the Mississippi State Board of Health.

DR. G. KOEHLER, member A.P.H.A., for 20 years Assistant Commissioner of Health of Chicago, and for the past year with the Illinois State Department of Public Health, was recently appointed Director of Health and Hygiene in the Springfield, Ill., schools.

DR. JOHN H. GOODNOUGH, of Rock Springs, Wyo., was recently elected President of the Wyoming Association of County Health Officers.

DR. LEMO T. DENNIS, of Rochester, N. Y., has been appointed field worker in child development and parental education of the American Home Economics Association, of Washington, D. C. She succeeds Dr. Esther McGinnis, who returns to her work as associate professor at the Institute of Child Welfare, University of Minnesota.

DR. CHARLES L. TEGTMEIER, of Freeburg, Ill., has been appointed District Health Officer, succeeding his brother, the late Dr. Edward H. Tegtmeier, of Millstadt. Dr. Tegtmeier has practised in Freeburg for 24 years. He served as Mayor of the city for 3 terms, and was village Health Officer for 15 years. He will have charge of state health activities in the Counties of St. Clair, Madison, Monroe, Clinton, Washington, Randolph and Perry.

LAWRENCE G. SYKES, M.D., formerly Medical Director of the Connecticut General Life Insurance Company, has been appointed Medical Director of the Life Extension Institute, the position formerly held by the late Dr. Eugene Lyman Fisk.

DEATH

DR. WILLIAM WILLIAMS KEEN, distinguished surgeon of Philadelphia, Pa., since 1889 Professor and Emeritus Professor in the Jefferson Medical College, died on June 7, at the age of 95 years.

CONFERENCES

August 11, Fourth Annual (one day) Course of Study in Cancer, Commission on Cancer of the Medical Society of the State of Pennsylvania, Lewistown, Pa.

August 12–18, Los Angeles County Public Health Exposition, Los Angeles, Calif.

September, Ninth Congress of the International Society for the History of Medicine, Bucharest, Rumania.

September 6–9, International Union Against Tuberculosis, The Hague.

September 12–19, American Hospital Association, Detroit, Mich.

September 26–October 1, National Congress of Parents and Teachers National Board of Managers, Chicago, Ill.

October, 1932, Health Committee of the League of Nations, Geneva.

October 3–7, Twenty-first Annual Safety Congress and Exposition, Washington, D. C.

October 22–24, Conference of State Sanitary Engineers, Washington, D. C.

October 24–27, 61st Annual Meeting, American Public Health Association, Washington, D. C.

November 14–18, Tenth Annual Short School, Texas Public Health Association, Dallas, Tex.